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property data
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NEWS 20 MAR 03 Updates in PATDPA; addition of IPC 8 data without attributes
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=> s ((near(3a)field) or mask or masking or rens or superresolution or (super(3a)resolution))
L1 182532 ((NEAR(3A) FIELD) OR MASK OR MASKING OR RENS OR SUPERRESOLUTION
      OR (SUPER(3A) RESOLUTION))

=> s ((gold or au or ag or silver or platinum or pt or cu or copper) and (partic? or colloid?)) an
L2 1842 ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPER)
      AND (PARTIC? OR COLLOID?)) AND L1

=> s l2 and ((optical or laser or information or compact)(3a)(disk or disc or med?))
L3 61 L2 AND ((OPTICAL OR LASER OR INFORMATION OR COMPACT)(3A)(DISK
      OR DISC OR MED?))

=> d all 1-61
```

L3 ANSWER 1 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:1341699 CAPLUS
ED Entered STN: 27 Dec 2005
TI ***Super*** - ***resolution*** and frequency-dependent efficiency of
near - ***field*** ***optical*** ***disks*** with
silver nanoparticles
AU Ng, Ming-Yaw; Liu, Wei-Chih
CS Department of Physics, National Taiwan Normal University, Taipei, 11677,
Taiwan
SO Optics Express (2005), 13(23), 9422-9430
CODEN: OPEXFF; ISSN: 1094-4087
URL: http://www.opticsexpress.org/view_file.cfm?doc=%24%2A%3C3%28K%20%20%20%0A&id=%25%28%2CK%2EJ%3C3C%20%0A
PB Optical Society of America
DT Journal; (online computer file)
LA English
CC 74 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)
AB The ***super*** - ***resoln*** . capability of the AgOx-type
super - ***resoln*** . ***near*** - ***field*** structure
disk with ***silver*** nanoparticles was studied using
finite-difference time-domain method at different incident light
frequencies. The ***near*** ***fields*** exhibited strongly local
field enhancement around ***silver*** nanoparticles in the AgOx layer
due to localized surface plasmon. The subwavelength recording marks
smaller than $\lambda/10$ were distinguishable since the metallic
nanoparticles with high localized fields transferred evanescent waves to
detectable signals in the far field. The far-field signals from random
silver nanoparticles displayed similar behaviors as those from
single nanoparticle and red-shifts of peak frequencies from
particle - ***particle*** interaction.
RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

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L3 ANSWER 2 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:508888 CAPLUS

DN 143:202832

ED Entered STN: 15 Jun 2005

TI Enhanced scattering of random-distribution nanoparticles and evanescent
 field in ***super*** - ***resolution*** ***near*** -
 field structure

AU Li, J. M.; Shi, L. P.; Lim, K. G.; Miao, X. S.; Yang, H. X.; Chong, T. C.

CS Data Storage Institute, Singapore, 117608, Singapore

SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Brief
 Communications & Review Papers (2005), 44(5B), 3620-3622
 CODEN: JAPNDE

PB Japan Society of Applied Physics

DT Journal

LA English

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)

AB This study focuses on evanescent fields induced by ***silver***
 nanoparticles in the ***mask*** layer and in the interfaces in an
 AgOx-type ***super*** - ***resoln*** . ***near*** - ***field***
 structure (***super*** - ***RENS***). The finite-difference
 time-domain (FDTD) method is used to analyze the scattering fields from
 the localized surface plasmons of ***silver*** nanoparticles. It has
 been found that the spatial extension of the evanescent field is very
 short along the thickness direction of the layers, and the 3-dimensional
 coupling patterns of the evanescent fields from the individual

particles are irregular. The study also found that the intensity
 of the evanescent fields is dependent on the ***silver*** concn.

ST scattering random distribution nanoparticle ***super*** ***resoln***
 near ***field*** structure; ***silver*** nanoparticle
 induced evanescent field super ***RENS*** optical recording

IT Simulation and Modeling
 (finite-difference; study of evanescent fields induced by ***Ag***
 nanoparticles in ***mask*** layer and in interfaces in AgOx-type
 super - ***resoln*** . ***near*** - ***field***
 structure)

IT Evanescent wave
 Nanoparticles
 Optical recording materials
 Surface plasmon

(study of evanescent fields induced by ***Ag*** nanoparticles in
 mask layer and in interfaces in AgOx-type ***super*** -
 resoln . ***near*** - ***field*** structure)

IT ***Optical*** ***disks***
 (super- ***RENS*** ; study of evanescent fields induced by ***Ag***
 nanoparticles in ***mask*** layer and in interfaces in AgOx-type
 super - ***resoln*** . ***near*** - ***field***
 structure in relation to)

IT 7440-22-4, ***Silver*** , processes

RL: DEV (Device component use); PEP (Physical, engineering or chemical
 process); PYP (Physical process); PROC (Process); USES (Uses)

(nanoparticles; study of evanescent fields induced by ***Ag***

nanoparticles in ***mask*** layer and in interfaces in AgOx-type
 super - ***resoln*** . ***near*** - ***field***
 structure)
 IT 1314-98-3, Zinc sulfide, processes 7631-86-9, Silica, processes
 20667-12-3D, ***Silver*** oxide, nonstoichiometric 87715-69-3
 RL: DEV (Device component use); PEP (Physical, engineering or chemical
 process); PYP (Physical process); PROC (Process); USES (Uses)
 (study of evanescent fields induced by ***Ag*** nanoparticles in
 mask layer and in interfaces in AgOx-type ***super*** -
 resoln . ***near*** - ***field*** structure)
 RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
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 (2) Fuji, H; Jpn J Appl Phys 2000, V39, P980 CAPLUS
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 L3 ANSWER 3 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2005:508866 CAPLUS
 DN 143:202830
 ED Entered STN: 15 Jun 2005
 TI Signal characteristics of ***super*** - ***resolution***
 near - ***field*** structure disks with 100 GB capacity
 AU Kim, Jooho; Hwang, Inoh; Kim, Hyunki; Park, Insik; Tominaga, Junji
 CS Digital Media R&D Center, SAMSUNG ELECTRONICS CO., LTD., Suwon, 442-742,
 S. Korea
 SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Brief
 Communications & Review Papers (2005), 44(5B), 3609-3611
 CODEN: JAPNDE
 PB Japan Society of Applied Physics
 DT Journal
 LA English
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 AB The authors report the basic characteristics of ***super***
 resoln . ***near*** - ***field*** structure (***Super*** -
 RENS) ***media*** at a blue ***laser*** optical system
 (laser wavelength 405 nm, numerical aperture 0.85). Using a novel write
 once read many (WORM) structure for a blue laser system, the authors
 obtained a carrier-to-noise ratio (CNR) above 33 dB from the signal of the
 37.5 nm mark length, which is equiv. to a 100 GB capacity with a 0.32
 .mu.m track pitch, and an eye pattern for 50 GB (2T: 75 nm) capacity using
 a patterned signal. Using a novel ***super*** - ***resoln*** .
 tellurium material with low ***super*** - ***resoln*** . readout
 power, the authors also improved the read stability.
 ST signal characteristics ***super*** ***resoln*** ***near***
 field ***optical*** WORM ***disk***
 IT ***Optical*** ROM ***disks***
 (WORM, super- ***RENS*** ; characteristics of ***super*** -
 resoln . ***near*** - ***field*** structure
 optical ***disks*** at blue ***laser*** ***optical***
 system)
 IT Crystallization
 Particle size distribution
 (characteristics of ***super*** - ***resoln*** . ***near*** -
 field structure ***optical*** ***disks*** at blue
 laser ***optical*** system)
 IT ***Optical*** ***disks***
 (write-once read-many, super- ***RENS*** ; characteristics of
 super - ***resoln*** . ***near*** - ***field***
 structure ***optical*** ***disks*** at blue ***laser***
 optical system)
 IT 12125-60-9, Praseodymium telluride (PrTe)
 RL: DEV (Device component use); USES (Uses)
 (characteristics of ***super*** - ***resoln*** . ***near*** -
 field structure ***optical*** ***disks*** at blue

IT 1314-98-3, Zinc sulfide, properties 7631-86-9, Silica, properties
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 . (characteristics of ***super*** - ***resoln*** . ***near*** -
 field structure ***optical*** ***disks*** at blue
 laser ***optical*** system)
 IT 7440-06-4, ***Platinum***, uses
 RL: DEV (Device component use); FMU (Formation, unclassified); FORM
 (Formation, nonpreparative); USES (Uses)
 (nanoparticles; characteristics of ***super*** - ***resoln*** .
 near - ***field*** structure ***optical*** ***disks***
 at blue ***laser*** ***optical*** system)
 IT 127860-51-9, Antimony germanium telluride
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (phase-change layer; characteristics of ***super*** - ***resoln***
 . ***near*** - ***field*** structure ***optical***
 disks at blue ***laser*** ***optical*** system)
 IT 12039-88-2, Tungsten disilicide
 RL: DEV (Device component use); USES (Uses)
 (recording material; characteristics of ***super*** - ***resoln***
 . ***near*** - ***field*** structure ***optical***
 disks at blue ***laser*** ***optical*** system)
 IT 11129-89-8, ***Platinum*** oxide
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (recording material; characteristics of ***super*** - ***resoln***
 . ***near*** - ***field*** structure ***optical***
 disks at blue ***laser*** ***optical*** system)

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD

- RE
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L3 ANSWER 4 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:508518 CAPLUS

DN 143:202815

ED Entered STN: 15 Jun 2005

TI Signal enhancement of ***super*** ***resolution*** enhanced
 near - ***field*** structure disk by ***silver***
 nanoparticles

AU Kurihara, Kazuma; Arai, Tomofumi; Nakano, Takashi; Tominaga, Junji
 CS Center for Applied Near-Field Optics Research (CAN-FOR), National
 Institute of Advanced Industrial Science and Technology (AIST), 1-1-1
 Higashi, Tsukuba, 305-8562, Japan

SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Brief
 Communications & Review Papers (2005), 44(5B), 3353-3355
 CODEN: JAPNDE

PB Japan Society of Applied Physics

DT Journal

LA English

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)

AB The authors propose a carrier-to-noise ratio (CNR) increment method for a
 super ***resoln*** . enhanced ***near*** - ***field***
 structure (super- ***RENS***) with ***silver*** nanoparticles. The
 silver nanoparticles were fabricated by the RF magnetron
 sputtering method. The mean diams. of the ***particles*** under
 as-deposited and 600.degree. C annealed conditions were evaluated as 5 nm
 and 15 nm, resp. The light absorption peak of the ***silver***
 nanoparticles was adjusted to a laser wavelength of 405 nm for an
 optical ***disk*** system. The ***silver*** nanoparticles

showed a higher absorption characteristic when they were annealed at above 500.degree. C. In the case of a recording mark size of 50 nm, the CNR enhancement of the super- ***RENS*** with the ***silver*** nanoparticles was evaluated as 11 dB. This method using the ***silver*** nanoparticles provided a higher CNR increment in recording marks below the optical resolu. limit.

ST ***super*** ***resoln*** enhanced ***near*** ***field***
 optical ***disk*** ***silver*** nanoparticle;
 optical super ***RENS*** ***disk*** ***silver***
 nanoparticle

IT Nanoparticles
 Particle size
 (carrier-to-noise ratio increment method for ***super*** -
 resoln . enhanced ***near*** - ***field*** structure with
 silver nanoparticles)

IT ***Optical*** ROM ***disks***
 Optical ***disks***
 (super- ***RENS*** ; carrier-to-noise ratio increment method for
 super - ***resoln*** . enhanced ***near*** - ***field***
 structure with ***silver*** nanoparticles)

IT 1314-98-3, Zinc sulfide, properties 7440-06-4, ***Platinum*** ,
 properties 7631-86-9, Silica, properties 689256-53-9, Antimony 61,
 indium 4.4, ***silver*** 6, tellurium 28.6 (atomic)
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (carrier-to-noise ratio increment method for ***super*** -
 resoln . enhanced ***near*** - ***field*** structure with
 silver nanoparticles)

IT 7440-22-4, ***Silver*** , properties
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (nanoparticles; carrier-to-noise ratio increment method for
 super - ***resoln*** . enhanced ***near*** - ***field***
 structure with ***silver*** nanoparticles)

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
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L3 ANSWER 5 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2005:283704 CAPLUS
 DN 142:345255
 ED Entered STN: 01 Apr 2005
 TI High density readable only ***optical*** ***disk***
 IN Kim, Hyun-Ki; Kim, Joo-Ho; Yoon, Du-Seop; Hwang, In-Oh
 PA Samsung Electronics Co., Ltd., S. Korea
 SO PCT Int. Appl., 16 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM G11B007-24
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005029484	A1	20050331	WO 2004-KR2426	20040922
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,
SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
SN, TD, TG

US 2005079313 A1 20050414 US 2004-944421 20040920
PRAI KR 2003-65534 A 20030922

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2005029484	ICM	G11B007-24
	IPCI	G11B0007-24 [ICM,7]
	IPCR	B32B0003-02 [I,A]; B32B0003-02 [I,C]; G11B0007-24 [I,A]; G11B0007-24 [I,C]
US 2005079313	IPCI	B32B0003-02 [ICM,7]
	IPCR	B32B0003-02 [I,A]; B32B0003-02 [I,C]; G11B0007-24 [I,A]; G11B0007-24 [I,C]
	NCL	428/064.400

AB Regarding many media developed recently, the biggest issue is capacity. A high d. readable only ***optical*** ***disk*** includes a substrate having pits with different lengths in accordance with unit information, wherein a depth of the pit increases as the pit length increases; and a ***mask*** layer that includes a metal oxide, or a mixt. of fine metal ***particles*** and a dielec. material. The high d. readable only ***optical*** ***disk*** may be used to read pits not greater than a reading resoln. limit and to obtain an optimal CNR since a pit depth is varied depending on a pit length. Also, a method of the high d. readable only ***optical*** ***disk*** may be used to prep. a high d. readable only ***optical*** ***disk*** having an optimal pit depth in accordance with a pit length.

ST high density readable ***optical*** ***disk*** ROM DVD

IT ***Optical*** ROM ***disks***
(high d. readable only ***optical*** ***disk***)

IT 11129-89-8, ***Platinum*** oxide 94858-24-9

RL: DEV (Device component use); USES (Uses)

(high d. readable only ***optical*** ***disk***)

IT 157392-07-9P, Silicon sulfur zinc oxide 848783-94-8P, ***Platinum*** zinc oxide silicide sulfide (Pt4.2Zn2.5O5Si2.5S2.5)

RL: DEV (Device component use); PNU (Preparation, unclassified); PREP

(Preparation); USES (Uses)

(high d. readable only ***optical*** ***disk***)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Lg Electronic Corp; KR 199642544 A 1996
- (2) Matsushita Corp; JP 62184630 A 1987
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- (5) Toshiba Corp; US 6130871 A 2000 CAPLUS

L3 ANSWER 6 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:175791 CAPLUS

DN 143:429538

ED Entered STN: 03 Mar 2005

TI ***Near*** ***field*** observation of a refractive index grating and a topographical grating by an optically-trapped ***gold***
particle

AU Ukita, Hiroo; Uemi, Hirotaka; Hirata, Atsuhiko

CS Faculty of Science and Engineering, Ritsumeikan University, Kusatsu-shi, Shiga, 525, Japan

SO Optical Review (2004), 11(6), 365-369

CODEN: OPREFN; ISSN: 1340-6000

PB Optical Society of Japan

DT Journal

LA English

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

AB We obsd. the ***near*** ***field*** for a refractive index grating fabricated on a planar light waveguide circuit (PLC) by scanning an optically-trapped 100 nm diam. ***gold*** ***particle***. We demonstrate that stable trapping and scanning occur with a Gaussian laser beam at the scan velocity of 1.6 .mu.m/s and Nd:YAG laser power of 25 mW. The scattered Ar+ laser light from the ***gold*** ***particle***

is strong at high refractive indexes of the grating with periods of 1.06 μm and 0.53 μm , both by s and p polarized illumination. In addn., we obsd. the surface profile of the ***optical*** ***disk*** tracking groove with and without the ***gold*** ***particle*** .
ST ***gold*** ***particle*** refractive index grating ***near***
,***field*** observation
IT Diffraction gratings
Gas lasers
Planar waveguides (optical)
Refractive index
Solid state lasers
(refractive index grating fabricated on planar light waveguide circuit and ***optical*** ***disk*** tracking groove profile obsd. by scanning optically-trapped ***gold*** ***particle***)
IT 7440-00-8, Neodymium, uses
RL: MOA (Modifier or additive use); USES (Uses)
(YAG doped with; refractive index grating fabricated on planar light waveguide circuit and ***optical*** ***disk*** tracking groove profile obsd. by scanning optically-trapped ***gold*** ***particle***)
IT 12005-21-9, Aluminum yttrium oxide (Al₅Y₃O₁₂)
RL: DEV (Device component use); USES (Uses)
(neodymium-doped; refractive index grating fabricated on planar light waveguide circuit and ***optical*** ***disk*** tracking groove profile obsd. by scanning optically-trapped ***gold*** ***particle***)
IT 7440-37-1, Argon, uses
RL: DEV (Device component use); USES (Uses)
(refractive index grating fabricated on planar light waveguide circuit and ***optical*** ***disk*** tracking groove profile obsd. by scanning optically-trapped ***gold*** ***particle***)
IT 7440-57-5, ***Gold*** , properties
RL: PRP (Properties)
(refractive index grating fabricated on planar light waveguide circuit and ***optical*** ***disk*** tracking groove profile obsd. by scanning optically-trapped ***gold*** ***particle***)
RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Felgner, H; Appl Opt 1995, V34, P977
(2) Furukawa, H; Opt Com 1998, V148, P221 CAPLUS
(3) Gu, M; Opt Lett 1999, V24, P76
(4) Hecht, B; J Appl Phys 1997, V81, P2492 CAPLUS
(5) Hill, K; Appl Phys Lett 1993, V62, P1035 CAPLUS
(6) Krenn, J; Phys Rev Lett 1999, V82, P2590 CAPLUS
(7) Martin, Y; J Appl Phys 2001, V89, P5774 CAPLUS
(8) Novotny, L; Phys Rev Lett 1997, V79, P645 CAPLUS
(9) Okamoto, T; Opt Rev 1999, V6, P211
(10) Raether, H; Springer Tracts in Modern Physics 1988, V3
(11) Sugiura, T; Near-Field Optics and Surface Plasmon Polaritons 2001, P143 CAPLUS
(12) Sugiura, T; Opt Lett 1997, V22, P1663
(13) Tamaru, H; Appl Phys Lett 2002, V80, P1826 CAPLUS
(14) Ukita, H; IEEE Lasers and Electro-Optics Society 1999 Annual Meeting 1999, V1, P169
L3 ANSWER 7 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:137831 CAPLUS
DN 142:363648
ED Entered STN: 17 Feb 2005
TI Read/write mechanism for a scattered type ***super*** -
resolution ***near*** - ***field*** structure using an AgOx
mask layer and the smallest mark reproduced
AU Ukita, Hiroo; Ueda; Yasushi; Sasaki, Mai
CS Faculty of Science and Engineering, Ritsumeikan University, Kusatsu, 525, Japan
SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers (2005), 44(1A), 197-201
CODEN: JAPNDE
PB Japan Society of Applied Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other

Reprographic Processes)

AB A working mechanism for a scattered type ***super*** - ***resoln***
 . ***near*** - ***field*** structure (***super*** - ***RENS***)
 disk using a ***silver*** oxide (AgOx) ***mask*** layer has been
 studied exptl. The AgOx ***mask*** layer has five possible states
 depending on the laser power: AgOx (as-deposited), uniformly dispersed
 Ag ***particles*** (after the initialization of 3.5 mW),
 Ag cluster (4-5 mW), ***Ag*** diffusion (5.5-7.5 mW), and a
 Ag ring structure (greater than 8 mW) for an objective lens
 numerical aperture of 0.5, a laser wavelength of 826 nm and a medium
 velocity of 2 m/s. On the other hand, the GeSbTe recording layer has the
 following possible states: crystal, halfway amorphous, completely
 amorphous, and gas bubble assocd. with ***Ag*** ***particles***
 For ***super*** - ***resoln*** . read power (4 mW), the ***mask***
 layer will have a ***Ag*** ring structure that increases both the
 signal carrier to noise ratio and the resoln. limit. The authors improve
 the resoln. limit of 413 nm to 50 nm at the duty ratio of 10% for the
 write optical pulse.

ST read write optical recording super ***RENS*** structure ***silver***
 oxide; ***optical*** ***disk*** ***superresoln*** ***near***
 field ***silver*** oxide

IT ***Optical*** ROM ***disks***
 (read/write mechanism of super- ***RENS*** ***optical***
 disk using AgOx ***mask*** layer)

IT 7440-22-4, ***Silver*** , processes
 RL: CPS (Chemical process); DEV (Device component use); FMU (Formation,
 unclassified); PEP (Physical, engineering or chemical process); PYP
 (Physical process); FORM (Formation, nonpreparative); PROC (Process); USES
 (Uses)
 (read/write mechanism of super- ***RENS*** ***optical***
 disk using AgO ***mask*** layer)

IT 20667-12-3D, ***Silver*** oxide, nonstoichiometric
 RL: CPS (Chemical process); DEV (Device component use); PEP (Physical,
 engineering or chemical process); PYP (Physical process); PROC (Process);
 USES (Uses)
 (read/write mechanism of super- ***RENS*** ***optical***
 disk using AgO ***mask*** layer)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses
 RL: DEV (Device component use); USES (Uses)
 (read/write mechanism of super- ***RENS*** ***optical***
 disk using AgO ***mask*** layer)

IT 149087-96-7, Antimony indium ***silver*** telluride
 RL: CPS (Chemical process); DEV (Device component use); PEP (Physical,
 engineering or chemical process); PYP (Physical process); PROC (Process);
 USES (Uses)
 (recording layer; read/write mechanism of super- ***RENS***
 optical ***disk*** using AgO ***mask*** layer)

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Fuji, H; Jpn J Appl Phys 2000, V39, P980 CAPLUS
- (2) Ho, F; Jpn J Appl Phys 2003, V42, P1
- (3) Kataja, K; Jpn J Appl Phys 2004, V43, P160 CAPLUS
- (4) Kikukawa, T; Appl Phys Lett 2002, V81, P4697 CAPLUS
- (5) Kikukawa, T; Jpn J Appl Phys 2003, V42, P1038 CAPLUS
- (6) Kim, J; Appl Phys Lett 2003, V83, P1701 CAPLUS
- (7) Kuwahara, M; Jpn J Appl Phys 2004, V43, PL1
- (8) Tagashira, T; ISOM 2001 TOYAMA Satellite Technical Digest 2001, P74
- (9) Tominaga, J; Appl Phys Lett 1998, V73, P2078 CAPLUS
- (10) Tominaga, J; Nanotechnology 2004, V15, P411 CAPLUS
- (11) Tsai, D; Jpn J Appl Phys 2000, V39, P982 CAPLUS
- (12) Wei, J; Appl Phys Lett 2003, V82, P2607 CAPLUS

L3 ANSWER 8 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:1103452 CAPLUS

DN 143:256480

ED Entered STN: 21 Dec 2004

TI ***Near*** ***field*** observation of a refractive index grating
 and a topographical grating by an optically-trapped ***gold***
 particle

AU Ukita, Hiroo; Uemi, Hirotaka

CS Faculty of Science and Engineering, Ritsumeikan University, Shiga, 525,
 Japan

SO Trends in Optics and Photonics (2004), 96/A(Conference on Lasers and
Electro-Optics, 2004), CTuP64/1-CTuP64/3
CODEN: TOPRBS
PB Optical Society of America
DT Journal
LA English
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related
Properties)
AB A refractive index grating fabricated on a planar light waveguide circuit
(PLC) and an ***optical*** ***disk*** tracking groove profile are
obsd. by scanning an optically-trapped 100-nm diam. ***gold***
particle
ST ***gold*** ***particle*** refractive index grating ***near***
field observation
IT Optical waveguides
(circuits; refractive index grating fabricated on planar light
waveguide circuit and ***optical*** ***disk*** tracking groove
profile obsd. by scanning optically-trapped ***gold***
particle)
IT Refractive index
(refractive index grating fabricated on planar light waveguide circuit
and ***optical*** ***disk*** tracking groove profile obsd. by
scanning optically-trapped ***gold*** ***particle***)
IT 12005-21-9, YAG
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(Nd-doped; refractive index grating fabricated on planar light
waveguide circuit and ***optical*** ***disk*** tracking groove
profile obsd. by scanning optically-trapped ***gold***
particle)
IT 7440-00-8, Neodymium, properties
RL: DEV (Device component use); MOA (Modifier or additive use); PRP
(Properties); USES (Uses)
(dopant; refractive index grating fabricated on planar light waveguide
circuit and ***optical*** ***disk*** tracking groove profile
obsd. by scanning optically-trapped ***gold*** ***particle***)
IT 7440-57-5, ***Gold***, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP
(Physical process); PROC (Process)
(refractive index grating fabricated on planar light waveguide circuit
and ***optical*** ***disk*** tracking groove profile obsd. by
scanning optically-trapped ***gold*** ***particle***)
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Hecht, B; J Appl Phys 1997, V81, P2492 CAPLUS
(2) Hill, K; Appl Phys Lett 1993, V62(8), P1035
(3) Martin, Y; J Appl Phys 2001, V89(10), P5774 CAPLUS
(4) Sugiura, T; Opt Lett 1997, V22(22), P1663
L3 ANSWER 9 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:1056452 CAPLUS
DN 142:186405
ED Entered STN: 09 Dec 2004
TI Structural phase transition of AgOx sandwiched between ZnS-SiO2 protective
layers under thermal and laser pulse annealing for ***super*** -
resolution ***near*** - ***field*** recording
AU Her, Yung-Chiun; Lan, Yuh-Chang; Hsu, Wei-Chih; Tsai, Song-Yeu
CS Department of Materials Engineering, National Chung Hsing University,
Taichung, 40254, Taiwan
SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes &
Review Papers (2004), 43(11A), 7519-7523
CODEN: JAPNDE
PB Japan Society of Applied Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)
Section cross-reference(s): 75
AB The as-deposited AgOx prep'd. at an oxygen flow ratio of 0.5 consisted of
Ag2O and AgO phases. During thermal annealing, the redn. of AgO into
Ag2O, decompn. of Ag2O into ***Ag*** and O2, and out diffusion and
aggregation of decompd. ***Ag*** would take place successively. The
chem. decompn. of AgOx film sandwiched between two ZnS-SiO2 protective

layers was confirmed to be an irreversible process. As being irradiated by a high power laser pulse similar to the recording process, a hollow ***Ag*** cylinder, or ring, serving as an aperture, was formed in the AgOx ***mask*** layer, and small ***Ag*** ***particles***, serving as light-scattering centers, were pptd. in the center region. During the readout process, the small aperture can significantly reduce the readout laser spot size, while the strong ***near*** - ***field*** interaction between pptd. ***Ag*** ***particles*** and sub-wavelength marks can effectively enhance the readout signal. That elucidates the recording and readout mechanisms of ***super*** - ***resoln*** . ***near*** - ***field*** structure disk with an AgOx ***mask*** layer.

ST optical recording readout mechanisms ***superresoln*** ***near***
 field structure disk; structural phase transition ***silver***
 oxide thermal annealing laser pulse

IT Laser radiation
 (pulsed; structural phase transition of AgOx sandwiched between ZnS-SiO2 layers under thermal- and laser pulse annealing for ***super*** - ***resoln*** . ***near*** - ***field*** recording)

IT Annealing
 Laser annealing
 Multilayers
 Optical ***disks***
 Optical recording
 Structural phase transition
 (structural phase transition of AgOx sandwiched between ZnS-SiO2 layers under thermal- and laser pulse annealing for ***super*** - ***resoln*** . ***near*** - ***field*** recording)

IT Reduction
 (thermal; structural phase transition of AgOx sandwiched between ZnS-SiO2 layers under thermal- and laser pulse annealing for ***super*** - ***resoln*** . ***near*** - ***field*** recording)

IT 1301-96-8, ***Silver*** oxide (AgO) 20667-12-3, ***Silver*** oxide (Ag2O)
 RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (structural phase transition of AgOx sandwiched between ZnS-SiO2 layers under thermal- and laser pulse annealing for ***super*** - ***resoln*** . ***near*** - ***field*** recording)

IT 7440-22-4P, ***Silver***, processes
 RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)
 (structural phase transition of AgOx sandwiched between ZnS-SiO2 layers under thermal- and laser pulse annealing for ***super*** - ***resoln*** . ***near*** - ***field*** recording)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses 16150-49-5, Antimony germanium telluride (Sb2Ge2Te5)
 RL: DEV (Device component use); USES (Uses)
 (structural phase transition of AgOx sandwiched between ZnS-SiO2 layers under thermal- and laser pulse annealing for ***super*** - ***resoln*** . ***near*** - ***field*** recording)

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE

- (1) Buchel, D; J Magn Soc Jpn 2001, V25, P240 CAPLUS
- (2) Fuji, H; Jpn J Appl Phys 2000, V39, P980 CAPLUS
- (3) Fukaya, T; J Appl Phys 2001, V89, P6139 CAPLUS
- (4) Ho, F; Jpn J Appl Phys 2003, V42, P1000 CAPLUS
- (5) Kikukawa, T; Jpn J Appl Phys 2003, V42, P1038 CAPLUS
- (6) Kolobov, A; Jpn J Appl Phys 2003, V42, P1022 CAPLUS
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- (8) Liu, W; Jpn J Appl Phys 2003, V42, P1031 CAPLUS
- (9) Men, L; Jpn J Appl Phys 2000, V39, P2639 CAPLUS
- (10) Shima, T; J Vac Sci Technol A 2003, V21, P634 CAPLUS
- (11) Shima, T; Thin Solid Films 2003, V425, P31 CAPLUS
- (12) Tominaga, J; Jpn J Appl Phys 2000, V39, P957 CAPLUS
- (13) Tominaga, J; Jpn J Appl Phys 2001, V40, P1831 CAPLUS

DN 143:183047
 ED Entered STN: 23 Nov 2004
 TI Numerically investigating ***near*** - ***field*** scattering for
 spatial enhancement of single irregular nano plasma ***particle***
 AU Chen, Sheng Chung; Tsai, Din Ping
 CS Department of Electrical Engineering, Far East College, Tainan, Taiwan
 SO Scanning (2004), 26(5, Suppl. 1), I/109-I/112
 CODEN: SCNNDF; ISSN: 0161-0457
 PB FAMS, Inc.
 DT Journal
 LA English
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 AB ***Near*** - ***field*** scattering from a nano ***silver***
 particle has been studied with an optical wave passing through it.
 The scattered field was found to be enhanced around the semisphere on
 which the incident wave impinges. Comparing it with the spherical
 particle, the irregular shape of a nanoparticle only changes the
 distribution of the scattered field. In this investigation, approached by
 finite difference time domain (FDTD), it was revealed that the peak value
 of the scattered field is proportional to the ***particle*** radius;
 this might be due to the fact that more plasmons could be excited.
 Furthermore, the highest enhancement occurred at the incident frequency
 close to plasma frequency of ***silver*** (.apprx.2000 THz). Thus,
 the numerical results could give a guide for optimizing AgOx type
 super ***resoln***. ***near*** - ***field*** structure (
 RENS) applications. When the red light source can be replaced
 with shorter wavelength ones, or larger ***silver*** ***particles***
 can be segregated, the ***near*** - ***field*** scattered
 enhancement might result.
 ST ***near*** ***field*** scattering spatial enhancement single
 irregular nanoplasma ***silver***
 IT Algorithm
 Evanescent wave
 Nanoparticles
 Optical ***disks***
 Surface plasmon
 (numerically investigating ***near*** - ***field*** scattering
 for spatial enhancement of single irregular nano plasma
 particle)
 IT 7440-22-4, ***Silver***, properties
 RL: PRP (Properties)
 (numerically investigating ***near*** - ***field*** scattering
 for spatial enhancement of single irregular nano plasma
 particle)
 RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
 (1) Bohren, C; Absorption and Scattering of Light by Small Particles 1983
 (2) Ishimaru, A; Electromagnetic Wave Propagation, Radiation and Scattering
 1991
 (3) Kunz, K; The Finite Difference Time Domain Method for Electromagnetics 1993
 (4) Liu, W; Appl Phys Lett 2001, V78, P685 CAPLUS
 (5) Sullivan, D; IEEE Microwave Guided Wave Lett 1996, V6, P97
 L3 ANSWER 11 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2004:687006 CAPLUS
 DN 141:322145
 ED Entered STN: 23 Aug 2004
 TI Signal characteristics of ***super*** - ***resolution***
 near - ***field*** structure ***disk*** in blue
 laser system
 AU Kim, Jooho; Hwang, Inoh; Kim, Hyunki; Yoon, Duseop; Park, Insik; Shin,
 Dongho; Park, Yunchang; Tominaga, Junji
 CS Digital Media R&D Center, Samsung Electronics Co., Ltd, Suwon, 442-742, S.
 Korea
 SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes &
 Review Papers (2004), 43(7B), 4921-4924
 CODEN: JAPNDE
 PB Japan Society of Applied Physics
 DT Journal
 LA English
 CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)
Section cross-reference(s): 74
AB The authors report the signal characteristics of a ***super*** -
. ***resoln*** . ***near*** - ***field*** structure (***super*** -
RENS) ***disk*** in a blue ***laser*** system (laser
wavelength, 405 nm; numerical aperture (NA), 0.85). By introducing a new
structure for the blue laser system, a 42.5 dB carrier to noise ratio
(CNR) at a 50-nm-mark-length-signal (which is equiv. to a 75 GB capacity
with a 0.32 .mu.m track pitch and a 1-7 modulation code (Blu-ray disk (BD)
format)) and a much higher readout-stability were obtained. Transmission
electron microscope (TEM) image anal. revealed that the new blue structure
has clear diffusion protection barriers produced by continuous ***pt***
particles , which is related to higher CNR and readout stability
characteristics.
ST signal ***super*** ***resoln*** ***near*** ***field***
structure ***disk*** blue ***laser***
IT Lasers
Optical ***disks***
Optical recording
(signal characteristics of ***super*** - ***resoln*** .
near - ***field*** structure ***disk*** in blue
laser system)
IT Polycarbonates, uses
RL: DEV (Device component use); USES (Uses)
(signal characteristics of ***super*** - ***resoln*** .
near - ***field*** structure ***disk*** in blue
laser system)
IT 1314-98-3, Zinc sulfide, properties 7440-06-4, ***Platinum*** ,
properties 7631-86-9, Silica, properties 11129-89-8, ***Platinum***
oxide 127860-51-9, Antimony germanium telluride
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(signal characteristics of ***super*** - ***resoln*** .
near - ***field*** structure ***disk*** in blue
laser system)
RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Abe, Y; Jpn J Appl Phys 1999, V38, P2092 CAPLUS
(2) Daly-Flynn, K; Jpn J Appl Phys 2003, V42, P795 CAPLUS
(3) Day, D; Appl Phys Lett 2002, V80, P2404 CAPLUS
(4) Fuji, H; Jpn J Appl Phys 2000, V39, P980 CAPLUS
(5) Guo, F; Appl Opt 2000, V39, P324
(6) Irie, M; Science 2001, V291, P1769 CAPLUS
(7) Kawata, S; Chem Rev 2000, V100, P1777 CAPLUS
(8) Kikukawa, T; Appl Phys Lett 2002, V81, P4697 CAPLUS
(9) Kim, J; Appl Phys Lett 2000, V77, P1774 CAPLUS
(10) Kim, J; Appl Phys Lett 2001, V79, P2600 CAPLUS
(11) Kim, J; Appl Phys Lett 2003, V83, P1701 CAPLUS
(12) Kim, J; Jpn J Appl Phys 2003, V42, P1014 CAPLUS
(13) Mishima, K; SPIE 2003, V5069, P90 CAPLUS
(14) Ohtsu, M; Small Particle of Light 2001, P36
(15) Shen, Y; The Principles of Nonlinear Optics 1984, P541
(16) Tominaga, J; Appl Phys Lett 1998, V73, P2078 CAPLUS
L3 ANSWER 12 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:680837 CAPLUS
DN 141:215338
ED Entered STN: 20 Aug 2004
TI ***Optical*** amplifier ***disk*** and ***optical***
amplification
IN Tominaga, Junji; Nakano, Takashi; Kuwahara, Masashi; Fuji, Hiroshi;
Kikugawa, Takashi
PA National Institute of Advanced Industrial Science and Technology, Japan;
Sharp Corp.; TDK Corporation
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01S003-10
ICS G02F001-01; G02F003-00; H01S003-06
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related
Properties)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
*PI	JP 2004235259	A2	20040819	JP 2003-19436	20030128
PRAI	JP 2003-19436		20030128		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004235259	ICM	H01S003-10
	ICS	G02F001-01; G02F003-00; H01S003-06
	IPI	H01S0003-10 [ICM,7]; G02F0001-01 [ICS,7]; G02F0003-00 [ICS,7]; H01S0003-06 [ICS,7]
	FTERM	2H079/AA08; 2H079/AA13; 2H079/BA01; 2H079/CA01; 2H079/CA04; 2H079/CA09; 2H079/KA14; 2K002/AA01; 2K002/AA03; 2K002/AB23; 2K002/BA01; 5F072/AB20; 5F072/JJ01; 5F072/JJ20; 5F072/PP10; 5F072/RR01; 5F072/YY17

AB The invention relates to an ***optical*** amplifier ***disk*** , providing the ***optical*** amplification in IR-visible regions, comprising a high speed rotating ***optical*** ***disk*** having the layered structure of a light-scattering film stacked with a surface plasmon light-generating film through a protective film, wherein the scattering light generated at the light-scattering film is amplified by the surface plasmon light generated at the surface plasmon light-generating film that forms the ***super*** ***resoln*** .
 near - ***field*** structure with the light-scattering film. The light-scattering film may be produced a transparent ceramic dispersed with metal ***particles*** or the ***particle*** made of the substance selected from ***platinum*** oxide, palladium oxide, ***silver*** oxide, cobalt oxide, tellurium oxide, tungsten oxide and ***silver*** iodide. And the surface plasmon light-generating film may be mainly composed of GeSbTe, AgInSbTe, TbFeCo, ***Pt*** , Pd, ***Au*** , ***Ag*** , Co, Al and their alloys.

ST ***optical*** amplifier ***disk*** ***super*** ***resoln***
 near ***field*** structure

IT ***Optical*** amplifiers
 Optical ***disks***

Surface plasmon
 (***optical*** amplifier ***disk*** and ***optical*** amplification)

IT Alloys, uses
 RL: DEV (Device component use); USES (Uses)
 (***optical*** amplifier ***disk*** and ***optical*** amplification)

IT 1314-35-8, Tungsten oxide, uses 7429-90-5, Aluminum, uses 7440-05-3, Palladium, uses 7440-06-4, ***Platinum*** , uses 7440-22-4, ***Silver*** , uses 7440-48-4, Cobalt, uses 7440-57-5, ***Gold*** , uses 7446-07-3, Tellurium oxide 7783-96-2, ***Silver*** iodide 11104-61-3, Cobalt oxide 11113-77-2, Palladium oxide 11129-89-8, ***Platinum*** oxide 16150-49-5, Antimony germanium telluride (Sb₂Ge₂Te₅) 20667-12-3D, ***Silver*** oxide (Ag₂O), non-stoichiometric 94858-24-9 127860-51-9, Antimony germanium telluride 181280-64-8, Antimony indium ***silver*** telluride (SbInAgTe)
 RL: DEV (Device component use); USES (Uses)
 (***optical*** amplifier ***disk*** and ***optical*** amplification)

L3 ANSWER 13 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2004:632452 CAPLUS
 DN 141:164903

ED Entered STN: 06 Aug 2004

TI ***Optical*** recording ***medium*** having ultra-high resolution
 near - ***field*** structure, recording method, regeneration method, recording device, a nd regeneration device

IN Kim, Soo-ho; Tominaga, Junji; Kikugawa, Takashi
 PA Samsung Japan Co., Ltd., Japan; National Institute of Advanced Industrial Science and Technology; TDK Corporation

SO Jpn. Kokai Tokkyo Koho, 11 pp.
 CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-24

*FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004220687	A2	20040805	JP 2003-6292	20030114
PRAI	JP 2003-6292		20030114		

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	JP 2004220687	ICM	G11B007-24
		IPCI	G11B0007-24 [ICM,7]
		FTERM	5D029/JA01; 5D029/JB23; 5D029/JC11; 5D029/KA07; 5D029/LA17; 5D029/LB11; 5D029/NA23; 5D029/NA24
AB	Disclosed is the ***optical*** recording ***medium*** comprising a polycarbonate layer, a 2nd dielec. layer, a 2nd layer having a m.p. near the recording power point, a 2nd hard protective layer, a recording layer, a 1st hard protective layer, a 1st layer having a m.p. near the recording power point, and a 1st dielec. layer. A laser beam is directed to the recording layer contg. ***Pt*** oxide, Pd oxide, or ***Ag*** oxide to pyrolyze the recording layer, thereby forming cavities contg. and oxygen and a ***particle*** of ***Pt***, Pd, or ***Ag*** and expanding toward the 1st and 2nd layers.		
ST	optical recording ultra high resolu ***near*** ***field*** structure		
IT	***Optical*** ***disks*** ***Optical*** recording (***optical*** recording ***medium*** having ultra-high resolu. ***near*** - ***field*** structure)		
IT	Polycarbonates, uses Telluride glasses RL: DEV (Device component use); USES (Uses) (***optical*** recording ***medium*** having ultra-high resolu. ***near*** - ***field*** structure)		
IT	7440-05-3, Palladium, processes 7440-06-4, ***Platinum***, processes 7782-44-7, Oxygen, processes RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (***optical*** recording ***medium*** having ultra-high resolu. ***near*** - ***field*** structure)		
IT	1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses 13494-80-9, Tellurium, uses RL: DEV (Device component use); USES (Uses) (***optical*** recording ***medium*** having ultra-high resolu. ***near*** - ***field*** structure)		
IT	11113-77-2, Palladium oxide 11113-88-5, ***Silver*** oxide 11129-89-8, ***Platinum*** oxide RL: NUU (Other use, unclassified); USES (Uses) (***optical*** recording ***medium*** having ultra-high resolu. ***near*** - ***field*** structure)		
IT	7440-22-4, ***Silver***, uses 7440-36-0, Antimony, uses 7440-74-6, Indium, uses RL: DEV (Device component use); USES (Uses) (telluride glass; ***optical*** recording ***medium*** having ultra-high resolu. ***near*** - ***field*** structure)		

L3 ANSWER 14 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:620502 CAPLUS

DN 141:304162

ED Entered STN: 04 Aug 2004

TI Effect of constituent phases of reactively sputtered AgOx film on recording and readout mechanisms of ***super*** - ***resolution***
near - ***field*** structure disk

AU Her, Yung-Chiun; Lan, Yuh-Chang; Hsu, Wei-Chih; Tsai, Song-Yeu
CS Department of Materials Engineering, National Chung Hsing University, Taichung, 40254, Taiwan

SO Journal of Applied Physics (2004), 96(3), 1283-1288

CODEN: JAPIAU; ISSN: 0021-8979

PB American Institute of Physics

DT Journal

LA English

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other

Reprographic Processes)

AB We have studied the dependence of the constituent phases of reactively sputtered AgOx ***mask*** layer on the recording and readout mechanisms of ***super*** - ***resoln*** . ***near*** - ***field*** disk. At low oxygen flow ratios, the AgOx ***mask*** layer was found to be composed of an appreciable amt. of ***Ag*** ***particles*** with sizes of tens of nanometers and Ag₂O phase. After recording by a high power laser pulse, a hollow ***Ag*** cylinder that had its center filled with O₂ was formed in the AgOx ***mask*** layer. The hollow ***Ag*** cylinder would serve as an aperture and could effectively reduce the laser spot size during readout, leading to the ***super*** - ***resoln*** . effect only. At high oxygen flow ratios, the AgOx ***mask*** layer was found to be mostly composed of Ag₂O and/or AgO phases. After recording by a high power laser pulse, a hollow ***Ag*** cylinder that had its center filled with nanosized ***Ag*** ***particles*** was formed in the AgOx ***mask*** layer. The nanosized ***Ag*** ppts. would serve as light-scattering centers and could yield strong ***near*** - ***field*** interaction with the subwavelength marks, resulting in both the ***super*** - ***resoln*** . and ***near*** - ***field*** effects during readout.

ST effect phase ***silver*** oxide film recording readout nearfield disk

IT Decomposition
(effect of AgOx film decompn. on recording and readout mechanisms of ***super*** - ***resoln*** . ***near*** - ***field*** structure disk)

IT Microstructure
Optical ***disks***
Optical recording
(effect of constituent phases of reactively sputtered AgOx film on recording and readout mechanisms of ***super*** - ***resoln*** . ***near*** - ***field*** structure disk)

IT 178255-68-0, Silicon zinc oxide sulfide (Si_{0.1}Zn_{0.4}O_{0.2}S_{0.4})
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(effect of AgOx film decompn. on recording and readout mechanisms of ***super*** - ***resoln*** . ***near*** - ***field*** structure disk)

IT 1301-96-8P, ***Silver*** oxide (AgO) 7440-22-4P, ***Silver*** , properties 11113-88-5P, ***Silver*** oxide 20667-12-3P, ***Silver*** oxide
RL: PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(effect of constituent phases of reactively sputtered AgOx film on recording and readout mechanisms of ***super*** - ***resoln*** . ***near*** - ***field*** structure disk)

IT 16150-49-5, Antimony germanium telluride (Sb₂Ge₂Te₅)
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(effect of constituent phases of reactively sputtered AgOx film on recording and readout mechanisms of ***super*** - ***resoln*** . ***near*** - ***field*** structure disk)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L3 ANSWER 15 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:346659 CAPLUS

DN 141:79241

ED Entered STN: 28 Apr 2004

TI Thermal simulation for a two-dimensional ***near*** - ***field*** optical recording system using a vertical-cavity surface-emitting laser

AU Kurihara, Kazuma; Nanri, Kenzo; Goto, Kenya

CS School of Science, Department of Physics, Tokai University, Hiratsuka, Kanagawa, 259-1292, Japan

SO Applied Physics Letters (2004), 84(17), 3415-3417
 CODEN: APPLAB; ISSN: 0003-6951
 PB American Institute of Physics
 DT Journal
 LA English
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 AB An optical recording method with high throughput is required to create a two-dimensional ***near*** - ***field*** optical memory system using a vertical-cavity surface-emitting laser (VCSEL). Optical recording is possible with the combination of a ***near*** - ***field*** probe and patterned medium. A patterned medium consisting of 40 nm periodic dots with phase change medium and ***silver*** nanoparticles were used for plasmon resonance induced by an electromagnetic wave. The elec. field power d. at the ***silver*** nanoparticles was increased about 87 000 times over that with a structure without patterned medium. Heat from this structure is effectively used by thermal conduction out of a ***silver*** nanoparticle and by concg. the heat on a ***particle***. When the 1 mW optical intensity from a VCSEL is used, ***near*** - ***field*** optical recording is achieved. The recorded feature size was estd. at 40 nm. In this letter, a recording method is described using plasmon resonance and thermal conduction effects.
 ST ***near*** ***field*** optical recording vertical cavity surface emitting laser; plasmon resonance thermal conduction effect ***near***
 IT ***field*** optical recording
 IT ***Optical*** ***disks***
 (phase change; thermal simulation fora two-dimensional ***near*** - ***field*** optical recording system using vertical-cavity surface-emitting laser)
 IT Surface plasmon
 (resonance; thermal simulation fora two-dimensional ***near*** - ***field*** optical recording system using vertical-cavity surface-emitting laser)
 IT Laser radiation
 Thermal conductivity
 (thermal simulation fora two-dimensional ***near*** - ***field*** optical recording system using vertical-cavity surface-emitting laser)
 IT Optical memory devices
 Optical recording
 (two-dimensional ***near*** - ***field*** optical recording system using vertical-cavity surface-emitting laser)
 IT Semiconductor lasers
 (vertical-cavity surface-emitting; two-dimensional ***near*** - ***field*** optical recording system using vertical-cavity surface-emitting laser)
 IT 7440-22-4, ***Silver***, processes
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
 (nanoparticles; thermal simulation fora two-dimensional ***near*** - ***field*** optical recording system using vertical-cavity surface-emitting laser)
 IT 12063-98-8, Gallium phosphide, uses
 RL: DEV (Device component use); USES (Uses)
 (probe; thermal simulation fora two-dimensional ***near*** - ***field*** optical recording system using vertical-cavity surface-emitting laser)

RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
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1987, P519
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L3 ANSWER 16 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:254691 CAPLUS

DN 140:397329

ED Entered STN: 29 Mar 2004

TI Numerical study of the AgOx ***super*** ***resolution*** structure

AU Kataja, Kari; Olkkonen, Juuso; Aikio, Janne; Howe, Dennis

CS VTT Electronics, Oulu, FIN-90571, Finland

SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes &
Review Papers (2004), 43(1), 160-167

CODEN: JAPNDE

PB Japan Society of Applied Physics

DT Journal

LA English

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

AB The ***super*** ***resoln*** . ***near*** ***field***

structure (SR) which incorporates an AgOx thin film was studied using a
finite difference time domain modeling tool. The goal is to explain the
phys. mechanism(s) responsible for the SR phenomenon in these types of
structures. Both absorption and readout characteristics were studied.
Modeling results indicate that the SR structure which contains a AgOx
active layer can produce ***super*** - ***resoln*** . when the
aperture formed in the active layer consists of a annular cylinder of
small ***Ag*** ***particles*** which surround a transparent
homogeneous "hole" filled with a low index material such as O2.

ST ***silver*** oxide ***near*** ***field*** structure optical
data storage

IT Simulation and Modeling

(finite-difference-time-domain; numerical study of AgOx ***super***
resoln . ***near*** ***field*** structure in
optical storage ***medium***)

IT ***Optical*** ***disks***

Optical recording

Optical recording materials

(numerical study of AgOx ***super*** ***resoln*** . ***near***
field structure in ***optical*** storage ***medium***)

IT 1314-98-3, Zinc sulfide, properties 7631-86-9, Silica, properties

16150-49-5, Germanium antimony telluride(Ge2Sb2Te5) 20667-12-3D,

Silver oxide (Ag2O), nonstoichiometric

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP
(Physical process); PROC (Process)

(numerical study of AgOx ***super*** ***resoln*** . ***near***
field structure in ***optical*** storage ***medium***)

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L3 ANSWER 17 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2003:817848 CAPLUS
 DN 139:314572
 ED Entered STN: 17 Oct 2003
 TI ***Super*** ***resolution*** ***optical*** ***disk***
 mother mold
 IN Chen, Bing Mau
 PA Taiwan
 SO U.S. Pat. Appl. Publ., 24 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 IC ICM B29D011-00
 ICS C25D003-12
 INCL 264001360; 264002500; 205271000
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003193101	A1	20031016	US 2003-248689	20030210
	TW 569211	B	20040101	TW 2002-91107274	20020411
	CN 1453779	A	20031105	CN 2002-118601	20020425
	JP 2003323748	A2	20031114	JP 2003-107653	20030411
PRAI	TW 2002-91107274	A	20020411		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2003193101	ICM	B29D011-00
	ICS	C25D003-12
	INCL	264001360; 264002500; 205271000
	IPCI	B29D0011-00 [ICM,7]; C25D0003-12 [ICS,7]
	IPCR	B29C0033-38 [I,A]; B29C0033-38 [I,C]; B29C0045-26 [N,A]; B29C0045-26 [N,C]; B29D0017-00 [I,A]; B29D0017-00 [I,C]; C25D0001-00 [I,C]; C25D0001-10 [I,A]
	NCL	264/001.360
	ECLA	B29C033/38M; B29D017/00C; C25D001/10
TW 569211	IPCI	G11B0007-26 [ICM,7]; G11B0007-24 [ICS,7]
CN 1453779	IPCI	G11B0007-26 [ICM,7]
JP 2003323748	IPCI	G11B0007-26 [ICM,7]

AB A ***super*** ***resoln*** . ***optical*** ***disk***
 mother mold, having a substrate, a ***super*** ***resoln*** .
 structure and a patterned photoresist layer. The ***super***
 resoln . is disposed between the substrate and the patterned
 photoresist layer. The ***super*** ***resoln*** . ***optical***
 disk mother mold is fabricated on the substrate prior to formation
 of the photoresist layer. The above process does not cause the problem of
 pre-exposing the photoresist layer. In addn., the surface roughness
 caused by thin-film ***particle*** will not occur to the
 optical ***disk*** mother mold fabricated by the above
 process. Therefore, the ***optical*** ***disk*** stamper made by
 the ***optical*** ***disk*** mother mold will not suffer from the
 problem of the surface roughness.
 ST ***super*** ***resoln*** ***optical*** ***disk*** mother
 mold
 IT ***Optical*** ***disks***
 (***super*** ***resoln*** . ***optical*** ***disk***
 mother mold)
 IT Photoresists
 (***super*** ***resoln*** . ***optical*** ***disk***
 mother mold contg.)
 IT 409-21-2, Silicon carbide, uses 1314-36-9, Yttrium oxide, uses
 1314-61-0, Tantalum oxide 1314-98-3, Zinc sulfide, uses 7631-86-9,
 Silicon oxide, uses 11116-16-8, Titanium nitride 12033-89-5, Silicon
 nitride, uses 24304-00-5, Aluminum nitride 51845-89-7, Germanium
 nitride
 RL: DEV (Device component use); USES (Uses)
 (dielec. layer; ***super*** ***resoln*** . ***optical***
 disk mother mold contg.)
 IT 7440-22-4, ***Silver*** , uses 7440-31-5, Tin, uses 7440-36-0,
 Antimony, uses 7440-38-2, Arsenic, uses 7440-55-3, Gallium, uses
 7440-56-4, Germanium, uses 7440-62-2, Vanadium, uses 7440-66-6, Zinc,

uses 7440-74-6, Indium, uses 7782-49-2, Selenium, uses 13494-80-9,
Tellurium, uses
RL: DEV (Device component use); USES (Uses)
, (***super*** ***resoln*** . ***optical*** ***disk***
mother mold contg.)

L3 ANSWER 18 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:816230 CAPLUS
DN 140:329412
ED Entered STN: 17 Oct 2003
TI Optical nonlinear features and response mechanisms of PtO2 and PdO1.1
masks for optical data storage with ***superresolution***
near - ***field*** structure
AU Liu, Qian; Fukaya, Toshio; Tominaga, Junji; Kim, Jong H.; Kikukawa,
Takashi
CS Laboratory for Advanced Optical Technology(LAOTHCH), National Institute of
Advanced Industrial Science and Technology, Ibaraki, 305-8562, Japan
SO Proceedings of SPIE-The International Society for Optical Engineering
(2003), 5069(Optical Data Storage 2003), 144-149
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)
AB Nonlinear properties and response mechanisms of PtO2 and PdO1.1
mask layers for optical data storage with ***super*** -
resoln . ***near*** - ***field*** structure were
investigated. The results obtained from Z-scan measurement was supported
by microscopic observation studies. The 5.1 mW and 6.5 mW, resp., as the
decompn. threshold of the PdO1.1 and PtO2 for leading to metallic
nanoparticles were confirmed. The scanned PdO1.1 and PtO2 ***mask***
samples could be retrieved at less than their own threshold values. It
was also found for the PdO1.1 and PtO2 ***mask*** samples that the
nonlinear optical response not only came from the metallic
particles but also from the bubble deformation.
ST nonlinear response ***platinum*** oxide ***optical*** ***disk***
IT Nonlinear optical properties
Optical ***disks***
Optical recording materials
Optical reflection
(***optical*** nonlinear response mechanisms of PtO2 and PdO1.1
masks for optical data storage with ***superresoln*** .
near - ***field*** structure)
IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses
RL: DEV (Device component use); USES (Uses)
(optical nonlinear response mechanisms of PtO2 and PdO1.1 ***masks***
for optical data storage with ***superresoln*** . ***near*** -
field structure)
IT 1314-15-4, ***Platinum*** dioxide 12035-82-4D, ***Platinum***
oxide (PtO), nonstoichiometric
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(optical nonlinear response mechanisms of PtO2 and PdO1.1 ***masks***
for optical data storage with ***superresoln*** . ***near*** -
field structure)
RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L3 ANSWER 19 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:727336 CAPLUS
DN 139:371755
ED Entered STN: 17 Sep 2003

TI Recording and readout mechanisms of ***super*** - ***resolution***
 near - ***field*** structure disk with a ***silver*** oxide
 . ***mask*** layer
 AU Her, Yung-Chiun; Lan, Yuh-Chang; Hsu, Wei-Chih; Tsai, Song-Yeu
 CS Department of Materials Engineering, National Chung Hsing University,
 Taichung, 40254, Taiwan
 SO Applied Physics Letters (2003), 83(11), 2136-2138
 CODEN: APPLAB; ISSN: 0003-6951
 PB American Institute of Physics
 DT Journal
 LA English
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 AB The chem. decompn. of AgOx sandwiched between two ZnS-SiO2 protective
 layers was an irreversible process. The authors confirmed that a hollow
 Ag cylinder, or ring, serving as an aperture, was formed and small
 Ag ***particles*** were pptd. in the center region during the
 recording process. The small aperture can significantly reduce the laser
 spot size during the readout process and the strong ***near*** -
 field interaction between pptd. ***Ag*** ***particles***
 and subwavelength marks can effectively enhance the readout signal. That
 clarifies both the ***super*** - ***resoln*** . effect and the
 near - ***field*** interaction in the ***super*** -
 resoln . ***near*** - ***field*** structure disk.
 ST recording readout ***superresoln*** ***near*** ***field***
 optical ***disk*** ***silver*** oxide
 IT Annealing
 Decomposition
 Optical recording
 Reduction
 (phase transition and chem. decompn. of AgOx between two ZnS-SiO2
 layers under annealing in relation to recording and readout mechanisms
 of super- ***RENS*** ***optical*** ***disks***)
 IT ***Optical*** ***disks***
 (super- ***RENS*** ; phase transition and chem. decompn. of AgOx
 between two ZnS-SiO2 layers under annealing in relation to recording
 and readout mechanisms of super- ***RENS*** ***optical***
 disks)
 IT 1301-96-8, ***Silver*** oxide(AgO) 7440-22-4, ***Silver*** ,
 processes
 RL: CPS (Chemical process); DEV (Device component use); FMU (Formation,
 unclassified); PEP (Physical, engineering or chemical process); FORM
 (Formation, nonpreparative); PROC (Process); USES (Uses)
 (phase transition and chem. decompn. of AgOx between two ZnS-SiO2
 layers under annealing in relation to recording and readout mechanisms
 of super- ***RENS*** ***optical*** ***disks***)
 IT 20667-12-3, ***Silver*** oxide(Ag2O) 20667-12-3D, ***Silver***
 oxide, nonstoichiometric
 RL: CPS (Chemical process); DEV (Device component use); PEP (Physical,
 engineering or chemical process); PYP (Physical process); RCT (Reactant);
 PROC (Process); RACT (Reactant or reagent); USES (Uses)
 (phase transition and chem. decompn. of AgOx between two ZnS-SiO2
 layers under annealing in relation to recording and readout mechanisms
 of super- ***RENS*** ***optical*** ***disks***)
 IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses
 RL: DEV (Device component use); USES (Uses)
 (phase transition and chem. decompn. of AgOx between two ZnS-SiO2
 layers under annealing in relation to recording and readout mechanisms
 of super- ***RENS*** ***optical*** ***disks***)
 RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
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 (3) Liu, W; Appl Phys Lett 2001, V78, P685 CAPLUS
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 L3 ANSWER 20 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2003:613378 CAPLUS
 DN 139:282519
 ED Entered NEAR: 11 Aug 2003

TI The application of ***silver*** oxide thin films to plasmon photonic devices

AU Tominaga, Junji

CS Centre for Applied Near-Field Optics Research (CAN-FOR), National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, 305-8562, Japan

SO Journal of Physics: Condensed Matter (2003), 15(25), R1101-R1122
CODEN: JCOMEL; ISSN: 0953-8984

PB Institute of Physics Publishing

DT Journal; General Review

LA English

CC 73-0 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

AB A review. ***Ag*** has long been used for mirrors and tableware due to its high reflectivity, and it is still a very important component in optics. In ***particular***, ***Ag*** island films or small ***particles*** were applied as photog. materials, tools and devices to generate localized elec. fields for mol. detection and elec. field enhancement. It has recently been discovered that ***Ag*** oxide thin films may be a very useful material for dealing with optical ***near***-***field*** and surface plasmons. ***Ag*** oxide decomps. into O and small metallic ***Ag*** ***particles***, and this characteristic was applied to ultrahigh-d. optical data storage to create a strong light-scattering center that resolves small pits or marks beyond the diffraction limit. More recently, ***Ag*** film can be cheaply and easily transformed into ***Ag*** nanoparticles and nanowires in a gas mixt. of H and O in a vacuum chamber. The ***particle*** and wire diams. are very uniform and .apprx.20-50 nm, and they can be three-dimensionally fabricated on almost all material surfaces without the need for thermal annealing. ***Ag*** nanoparticles and wires will soon appear in small and cheap mol. detection sensors by small precise adjustments for generating surface plasmon conditions.

ST review ***silver*** oxide thin film plasmon photonic device

IT Laser annealing
Laser radiation
Light scattering
Optical ***disks***
Optical gain
Optical recording
Photonics
Plasmon
(application of ***silver*** oxide thin films to plasmon photonic devices)

IT 20667-12-3D, ***Silver*** oxide (Ag₂O), non-stoichiometric
RL: DEV (Device component use); USES (Uses)
(application of ***silver*** oxide thin films to plasmon photonic devices)

RE.CNT 58 THERE ARE 58 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L3 ANSWER 21 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:465962 CAPLUS

DN 139:157318

ED Entered STN: 18 Jun 2003

TI Bit-by-bit detection on ***super*** - ***resolution*** ***near***
- ***field*** structure disk with ***platinum*** oxide layer

AU Fuji, Hiroshi; Kikukawa, Takashi; Tominaga, Junji

CS Advanced Technology Research Laboratories, Sharp Corporation, Nara,
632-8567, Japan

SO Japanese Journal of Applied Physics, Part 2: Letters (2003), 42(6A),
L589-L591

CODEN: JAPLD8

PB Japan Society of Applied Physics

DT Journal

LA English

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

AB Bit-by-bit detection at a recording d. of 0.11 .mu.m pits is achieved on a
super - ***resoln*** . ***near*** - ***field*** structure (
super - ***RENS***) disk with a ***platinum*** oxide layer.
Pits and spaces are arranged as a recording pattern for pit position
recording. The pattern is recorded on the disk with using a 635-nm
wavelength laser and an objective lens with a 0.6 numerical aperture.
After recording using laser pulses with pre- and post-heating, the pattern
is correctly reproduced despite a size that is smaller than the resoln.
limit. Furthermore, the readout durability is more improved than that of
the previous ***silver*** oxide disk. The pattern is clearly
digitized by a read channel circuit for bit-by-bit detection.

ST ***super*** ***resoln*** ***near*** ***field***

optical ***disk*** ***platinum*** oxide layer;

optical recording super REN ***disk*** ***platinum***

oxide layer

IT Optical recording

Optical recording materials
 (bit-by-bit detection on ***super*** - ***resoln*** . ***near***
 - ***field*** structure disk with ***platinum*** oxide layer)
 IT . ***Optical*** . ***disks***
 (super- ***RENS*** ; bit-by-bit detection on ***super*** -
 . ***resoln*** . ***near*** - ***field*** structure disk with
 platinum oxide layer)
 IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses 149087-96-7,
 Antimony indium ***silver*** telluride
 RL: DEV (Device component use); USES (Uses)
 (bit-by-bit detection on ***super*** - ***resoln*** . ***near***
 - ***field*** structure disk with ***platinum*** oxide layer)
 IT 11129-89-8, ***Platinum*** oxide
 RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or
 reagent); USES (Uses)
 (bit-by-bit detection on ***super*** - ***resoln*** . ***near***
 - ***field*** structure disk with ***platinum*** oxide layer)
 IT 7440-06-4, ***Platinum*** , uses
 RL: DEV (Device component use); FMU (Formation, unclassified); FORM
 (Formation, nonpreparative); USES (Uses)
 (***particles*** ; bit-by-bit detection on ***super*** -
 resoln . ***near*** - ***field*** structure disk with
 platinum oxide layer)

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
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 Recording) 2002, P56
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L3 ANSWER 22 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:434875 CAPLUS

DN 139:14722

ED Entered STN: 06 Jun 2003

TI Optical devices having highly dispersive metallo-dielec. micropatterns

IN Polman, Albert; Strohhofer, Christof; Van Blaaderen, Alfons

PA BTG International Limited, UK

SO PCT Int. Appl., 33 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM G03F

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related
 Properties)

Section cross-reference(s): 66, 76, 77

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003046657	A2	20030605	WO 2002-GB5283	20021125
	WO 2003046657	A3	20030710		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

PRAI GB 2001-28147 A 20011123

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2003046657	ICM	G03F
	IPCI	G03F [ICM,7]
	IPCR	C03C0021-00 [I,A]; C03C0021-00 [I,C]; C03C0023-00 [I,A]; C03C0023-00 [I,C]; G02B0006-12 [N,A];

G02B0006-12 [N,C]; G02B0006-122 [I,A]; G02B0006-122 [I,C]; G02B0006-34 [N,A]; G02B0006-34 [N,C]; G02B0006-35 [N,A]; G02B0006-35 [N,C]

ECLA C03C021/00B4; C03C023/00B20; G02B0006/122P

AB A method of fabricating an optical device, an electronic or magnetic device is described entailing writing refractive index modifications in SiO₂ glass using a combination of ion-exchange and ***masking*** techniques, wherein the index increase in the irradiated regions of the glass is caused by the formation of ***Ag*** nanocrystals under the influence of an ion beam, wherein the index increase is highly dispersive, using self-assembled ***colloidal*** ***masks*** or lithog. defined ***masks*** to define micropatterns with pre-defined shape, size and symmetry. A multiplexer, or a demultiplexer, an optical transistor, a photonic crystal, or a dispersion compensation device using the highly dispersive metallo-dielec. micropatterns are also described. Electronic or magnetic devices (e.g., CD ROM device) including regions of nanocryst. aggregates may also be formed in a similar way.

ST dispersive micropattern optical electronic magnetic device fabrication

IT Electronic device fabrication
Semiconductor devices
(electronic devices having nanocryst. aggregates regions)

IT Nanocrystals
(electronic or magnetic devices using; optical devices having highly dispersive metallo-dielec. micropatterns and method of fabrication)

IT Ion exchange
(fabrication method; optical devices having highly dispersive metallo-dielec. micropatterns and method of fabrication)

IT Magnetic apparatus
(magnetic devices having nanocryst. aggregates regions)

IT Optical instruments
(multiplexers; optical devices having highly dispersive metallo-dielec. micropatterns and method of fabrication)

IT ***Optical*** ROM ***disks***
Optical instruments
Optical switches
Photonic crystals
(***optical*** devices having highly dispersive metallo-dielec. micropatterns and method of fabrication)

IT Transistors
(optical; optical devices having highly dispersive metallo-dielec. micropatterns and method of fabrication)

IT Silicate glasses
RL: DEV (Device component use); USES (Uses)
(substrate; optical devices having highly dispersive metallo-dielec. micropatterns and method of fabrication)

IT 7440-22-4, ***Silver***, uses
RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(nanocrystal, ion exchanged; optical devices having highly dispersive metallo-dielec. micropatterns and method of fabrication)

IT 7631-86-9, Silica, uses
RL: DEV (Device component use); USES (Uses)
(substrate; optical devices having highly dispersive metallo-dielec. micropatterns and method of fabrication)

L3 ANSWER 23 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:344816 CAPLUS

DN 139:221021

ED Entered STN: 07 May 2003

TI Optical transmittance study of ***silver*** ***particles*** formed by AgOx thermal decomposition

AU Shima, Takayuki; Tominaga, Junji

CS Laboratory for Advanced Optical Technology (Laotech), National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, 305-8562, Japan

SO Journal of Vacuum Science & Technology, A: Vacuum, Surfaces, and Films (2003), 21(3), 634-637
CODEN: JVTAD6; ISSN: 0734-2101

PB American Institute of Physics

DT Journal

LA English

CC 73-4 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)

Section cross-reference(s): 66

.AB . ***Ag*** oxide (AgOx) thin films exhibit localized surface plasmon resonance absorption when they were heated above the decompn. temp. The resonance absorption for annealed AgO was obvious with the film thickness of 5 nm, and it became weak at 15 nm. At. force microscope images of a 15. nm film showed that various-size ***particles*** (diam. in lateral direction: 100-600 nm) are dispersed after annealing at 600.degree.. Similar optical and morphol. properties were obtained with the O compn. ratio at 33-48 at.% (i.e., Ag₂O and AgO). AgOx film with .apprx.15 nm thickness is mostly used in super-resolutional ***near*** - ***field*** structure (super- ***RENS***) when combined with an ***optical*** ***disk*** for the readout of small marks beyond the diffraction limit. The results did not show, however, any evidence that the absorption properties and the readout process of super- ***RENS*** disk are well correlated.

ST ***silver*** oxide thermal decompn ***particle*** formation optical transmittance; ***particle*** formation ***silver*** oxide thermal decompn optical transmittance; UV visible spectra ***silver*** oxide ***particle*** thermal decompn; thermooptical effect ***silver*** oxide ***particle*** thermal decompn

IT Surface structure (of ***particles*** formed by AgOx thermal decompn.)

IT Ultrathin films (optical transmittance study of ***particles*** formed by AgOx thermal decompn. as)

IT ***Particles*** (optical transmittance study of ***silver*** ***particles*** formed by AgOx thermal decompn.)

IT Annealing
Optical transmission
Quantum size effect
Surface plasmon resonance
Thermal decomposition
Thermooptical effect
UV and visible spectra
(optical transmittance study of ***silver*** ***particles*** formed by AgOx thermal decompn. with)

IT 1301-96-8P, ***Silver*** oxide (AgO) 155645-84-4P, ***Silver*** oxide (Ag₂O)
RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); PYP (Physical process); PREP (Preparation); PROC (Process)
(optical transmittance study of ***particles*** formed by AgOx thermal decompn.)

IT 7440-22-4P, ***Silver*** , properties
RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); PYP (Physical process); PREP (Preparation); PROC (Process)
(optical transmittance study of ***silver*** ***particles*** formed by AgOx thermal decompn.)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L3 ANSWER 24 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:221203 CAPLUS
DN 138:409267
ED Entered STN: 21 Mar 2003
TI Recording and readout mechanisms of ***super*** - ***resolution***
.***near*** - ***field*** structure disk with ***silver*** -oxide
layer
AU Kikukawa, Takashi; Tachibana, Akihiro; Fuji, Hiroshi; Tominaga, Junji
CS Information Technology Research Center, TDK Corporation, Nagano, 385-0009,
Japan
SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes &
Review Papers (2003), 42(2B), 1038-1039
CODEN: JAPNDE
PB Japan Society of Applied Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)
AB The authors obsd. recorded and readout states of a ***super*** -
resoln . ***near*** - ***field*** structure disk with a AgO
layer by the use of a transmission electron microscope. It was confirmed
that recording is caused by the explosion of AgO and that the deformation
of the layers due to the explosion becomes a recorded mark. The
Ag ***particles*** which irreversibly ppt. after a high'
readout power irrads. are considered to be the origin of the ***super***
- ***resoln*** . readout.
ST recording readout ***super*** ***resoln*** ***near***
field disk ***silver*** oxide; ***optical*** ***disk***
super ***RENS*** ***silver*** oxide layer
IT Optical recording
(recording and readout mechanisms of ***super*** - ***resoln*** .
near - ***field*** structure disk with ***silver*** -oxide
layer)
IT ***Optical*** ***disks***
(super- ***RENS*** ; recording and readout mechanisms of
super - ***resoln*** . ***near*** - ***field***
structure disk with ***silver*** -oxide layer)
IT 1314-98-3, Zinc sulfide, processes 7631-86-9, Silica, processes
RL: DEV (Device component use); PEP (Physical, engineering or chemical
process); PYP (Physical process); PROC (Process); USES (Uses)
(dielec. layer; recording and readout mechanisms of ***super*** -
resoln . ***near*** - ***field*** structure disk with
silver -oxide layer)
IT 7440-22-4, ***Silver*** , processes
RL: DEV (Device component use); FMU (Formation, unclassified); PEP
(Physical, engineering or chemical process); PYP (Physical process); FORM
(Formation, nonpreparative); PROC (Process); USES (Uses)
(recording and readout mechanisms of ***super*** - ***resoln*** .
near - ***field*** structure disk with ***silver*** -oxide
layer)
IT 1301-96-8, ***Silver*** oxide (AgO) 502762-05-2, Antimony 60.8,
indium 4.5, ***silver*** 6, tellurium 28.7 (atomic)
RL: DEV (Device component use); PEP (Physical, engineering or chemical
process); PYP (Physical process); PROC (Process); USES (Uses)
(recording layer; recording and readout mechanisms of ***super*** -
resoln . ***near*** - ***field*** structure disk with
silver -oxide layer)
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Fuji, H; Jpn J Appl Phys 2000, V39, P980 CAPLUS
(2) Tominaga, J; Appl Phys Lett 1998, V73, P2078 CAPLUS
(3) Tominaga, J; Jpn J Appl Phys 2001, V40, P1831 CAPLUS

L3 ANSWER 25 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:173069 CAPLUS
DN 138:195963
ED Entered STN: 07 Mar 2003
TI Optical recording method using ***optical*** recording ***medium***
IN Fujimoto, Hiroshi
PA Fuji Photo Film Co., Ltd., Japan
SO Eur. Pat. Appl., 9 pp.
CODEN: EPXXDW

DT Patent
LA English
IC ICM G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1288930	A2	20030305	EP 2002-19437	20020830
	EP 1288930	A3	20030910		
	EP 1288930	B1	20050601		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
	JP 2003077173	A2	20030314	JP 2001-263919	20010831
	JP 3681059	B2	20050810		
	US 2003048700	A1	20030313	US 2002-230051	20020829
	US 6788626	B2	20040907		
PRAI	JP 2001-263919	A	20010831		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1288930	ICM	G11B007-24
	IPCI	G11B0007-24 [ICM,7]
	IPCR	G11B0007-24 [I,A]; G11B0007-24 [I,C]; G11B0007-243 [I,A]; G11B0007-251 [I,A]
	ECLA	G11B007/24; G11B007/243; G11B007/251
JP 2003077173	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26 [ICS,7]; G11B0007-0045 [ICS,7]; G11B0007-26 [ICS,7]
US 2003048700	IPCI	G11B0011-00 [ICM,7]
	IPCR	G11B0007-24 [I,A]; G11B0007-24 [I,C]; G11B0007-243 [I,A]; G11B0007-251 [I,A]
	NCL	369/013.380
	ECLA	G11B007/24; G11B007/243; G11B007/251
AB	An optical recording method comprises making a recording with ***near*** ***field*** light on an ***optical*** recording ***medium*** comprising a substrate having provided on it a ***particle*** layer contg. ***particles*** having an av. ***particle*** size ranging 1-50 nm.	
ST	***optical*** recording ***medium*** telluride glass	
IT	Optical recording (optical recording method using ***optical*** recording ***medium***)	
IT	Telluride glasses RL: DEV (Device component use); USES (Uses) (optical recording method using ***optical*** recording ***medium***)	
IT	7440-56-4, Germanium, uses RL: DEV (Device component use); USES (Uses) (Antimony Germanium Telluride glass; ***optical*** recording ***medium*** contg.)	
IT	7440-22-4, ***Silver*** , uses 7440-36-0, Antimony, uses 7440-74-6, Indium, uses 13494-80-9, Tellurium, uses RL: DEV (Device component use); USES (Uses) (Antimony Indium ***Silver*** Telluride glass; ***optical*** recording ***medium*** contg.)	
IT	127860-51-9P, Antimony Germanium Telluride 149087-96-7P, Antimony Indium ***Silver*** Telluride RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses) (***optical*** recording ***medium*** contg.)	
IT	7761-88-8, ***Silver*** nitrate, reactions 12737-02-9, Antimony acetate 25114-58-3, Indium acetate RL: RCT (Reactant); RACT (Reactant or reagent) (prepn. of ***optical*** recording ***medium*** for ***optical*** recording method)	
IT	9003-39-8, Polyvinyl pyrrolidone RL: TEM (Technical or engineered material use); USES (Uses) (prepn. of ***optical*** recording ***medium*** for ***optical*** recording method)	

DN 138:262594
 ED Entered STN: 17 Dec 2002
 .TI Rigid bubble pit formation and huge signal enhancement in ***super*** -
 . ***resolution*** ***near*** - ***field*** structure disk with
 platinum oxide layer
 AU Kikukawa, T.; Nakano, T.; Shima, T.; Tominaga, J.
 CS TDK Corporation, Information Technology Research Center, Saku, Nagano,
 385-0009, Japan
 SO Applied Physics Letters (2002), 81(25), 4697-4699
 CODEN: APPLAB; ISSN: 0003-6951
 PB American Institute of Physics
 DT Journal
 LA English
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 AB Huge signal enhancement was obsd. by a ***super*** - ***resoln***
 near - ***field*** structure disk with a ***platinum***
 -oxide layer. The carrier-to-noise ratio of 200-nm-mark trains reached
 46.1 dB, and 42.3 dB was obtained even at 150-nm-mark trains. The sizes
 of the marks were one-fifth to one-seventh of the laser spot diam. of the
 readout system. The cross section of the mark trains was also obsd. by
 transmission electron microscopy. It was confirmed that 200-nm-size
 bubble pits were rigidly formed in good sepn. and .apprx.20-nm-
 platinum ***particles*** pptd. inside the bubble. The
 computer-simulation based on the model supported the huge signal
 enhancement.
 ST bubble pit formation ***super*** ***resoln*** ***near***
 field structure disk; ***platinum*** oxide super REN
 optical ***disk*** bubble pit formation
 IT Metallic glasses
 RL: DEV (Device component use); PEP (Physical, engineering or chemical
 process); PYP (Physical process); PROC (Process); USES (Uses)
 (antimony indium ***silver*** telluride; rigid bubble pit formation
 and huge signal enhancement in ***super*** - ***resoln***
 near - ***field*** structure disk with ***platinum***
 oxide layer)
 IT Optical recording
 (rigid bubble pit formation and huge signal enhancement in
 super - ***resoln*** . ***near*** - ***field***
 structure disk with ***platinum*** oxide layer)
 IT ***Optical*** ***disks***
 (***super*** - ***resoln*** . ***near*** - ***field*** ;
 rigid bubble pit formation and huge signal enhancement in ***super***
 - ***resoln*** . ***near*** - ***field*** structure disk with
 platinum -oxide layer)
 IT 7440-22-4, ***Silver*** , processes 7440-36-0, Antimony, processes
 7440-74-6, Indium, processes 13494-80-9, Tellurium, processes
 RL: DEV (Device component use); PEP (Physical, engineering or chemical
 process); PYP (Physical process); PROC (Process); USES (Uses)
 (antimony indium ***silver*** telluride; rigid bubble pit formation
 and huge signal enhancement in ***super*** - ***resoln***
 near - ***field*** structure disk with ***platinum***
 oxide layer)
 IT 7440-06-4, ***Platinum*** , processes
 RL: DEV (Device component use); FMU (Formation, unclassified); PEP
 (Physical, engineering or chemical process); PYP (Physical process); FORM
 (Formation, nonpreparative); PROC (Process); USES (Uses)
 (rigid bubble pit formation and huge signal enhancement in
 super - ***resoln*** . ***near*** - ***field***
 structure disk with ***platinum*** oxide layer)
 IT 1314-98-3, Zinc sulfide, processes 7631-86-9, Silica, processes
 502762-05-2
 RL: DEV (Device component use); PEP (Physical, engineering or chemical
 process); PYP (Physical process); PROC (Process); USES (Uses)
 (rigid bubble pit formation and huge signal enhancement in
 super - ***resoln*** . ***near*** - ***field***
 structure disk with ***platinum*** oxide layer)
 IT 1314-15-4, ***Platinum*** dioxide
 RL: DEV (Device component use); PEP (Physical, engineering or chemical
 process); PYP (Physical process); PROC (Process); USES (Uses)
 (rigid bubble pit formation and huge signal enhancement in
 super - ***resoln*** . ***near*** - ***field***

structure disk with ***platinum*** -oxide layer)
RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
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- (13) Partovi, A; Appl Phys Lett 1999, V75, P1515 CAPLUS
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- (15) Tominaga, J; Appl Phys Lett 1998, V73, P2078 CAPLUS
- (16) Tominaga, J; Jpn J Appl Phys, Part 1 2001, V40, P1831 CAPLUS
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L3 ANSWER 27 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:363680 CAPLUS

DN 136:377359

ED Entered STN: 16 May 2002

TI Investigations of sputtered ***silver*** oxide deposits for the super-
RENS high density optical data storage application

AU Buechel, Dorothea; Mihalcea, Christophe; Fukaya, Toshio; Atoda, Nobufumi;
Tominaga, Junji

CS Laboratory for Advanced Optical Technology (LAOTEC), National Institute of
Advanced Industrial Science and Technology (AIST), 1-1-1 Higashi,
Tsukuba-city, Ibaraki, 305-8562, Japan

SO Materials Research Society Symposium Proceedings (2001), 674(Applications
of Ferromagnetic and Optical Materials, Storage and Magnetoelectronics),
V3.2.1-V3.2.6

CODEN: MRSPDH; ISSN: 0272-9172

PB Materials Research Society

DT Journal

LA English

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

AB Thin ***silver*** oxide films used as ***mask*** layers in
super - ***Resoln*** . Nearfield Structure (***super*** -
RENS) ***disks*** for high d. ***optical*** data storage
were reactively sputter-deposited and their compn. was detd. by
spectroscopic means. It was found that the stoichiometry of the films
changed with the oxygen content in the sputtering gas atm. With a
stepwise increase in the percentage of O2 from 0-100%, the corresponding
layers consist of ***Ag*** , mixts. of ***Ag*** and Ag2O, Ag2O,
mixts. of Ag2O and AgO and AgO. Laser activation of such oxidic phase
contg. deposits results in the decompn. of the material and excitation of
strong local plasmons in the remaining ***silver*** clusters. This
was confirmed by acquiring surface enhanced Raman spectra (SERS) of
benzoic acid (BA), ***copper*** phthalocyanine (CP) and internal
carbon impurities on ***silver*** oxide substrates. From this data,
it was concluded that the sub-wavelength ***resoln*** . obtained in
super - ***RENS*** disks is mediated by local surface plasmons
on small ***silver*** ***particles*** forming in the ***mask***
layer.

ST ***superresoln*** nearfield structure optical data storage

IT ***silver*** oxide

IT ***Optical*** ***disks***

Raman spectra

Sputtering

Surface plasmon

(investigations of sputtered ***silver*** oxide deposits for
super - ***resoln*** . nearfield structure high d. optical
data storage application)

IT 65-85-0, Benzoic acid, properties 147-14-8, ***Copper***
phthalocyanine

RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)

(investigations of sputtered ***silver*** oxide deposits for

super - ***resoln*** . nearfield structure high d. optical data storage application)

.IT 1301-96-8P, ***Silver*** oxide (AgO) 20667-12-3P, ***Silver*** oxide

RL: PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(investigations of sputtered ***silver*** oxide deposits for ***super*** - ***resoln*** . nearfield structure high d. optical data storage application)

IT 7440-22-4, ***Silver*** , properties

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(investigations of sputtered ***silver*** oxide deposits for ***super*** - ***resoln*** . nearfield structure high d. optical data storage application)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Buchel, D; J Magn Soc Japan 2001, V25(3-2), P240 CAPLUS

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(4) Fuji, H; Jpn J Appl Phys 2000, V39(I, 2B), P980

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(6) Kim, J; Appl Phys Lett 2000, V77, P1774 CAPLUS

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(10) Tominaga, J; Appl Phys Lett, in press 2001, V78 CAPLUS

(11) Tsang, J; Chem Phys Lett 1980, V76(1), P54 CAPLUS

L3 ANSWER 28 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:349326 CAPLUS

DN 136:348376

ED Entered STN: 10 May 2002

TI Rewritable ***optical*** recording ***medium*** using ***near*** - ***field*** light

IN Nomura, Akihiko; Kondo, Tetsuya

PA Victor Co. of Japan, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-24

ICS G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002133720	A2	20020510	JP 2000-331396	20001030
PRAI	JP 2000-331396		20001030		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002133720	ICM	G11B007-24
	ICS	G11B007-24
	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]

AB The medium comprises a transparent substrate successively laminated with a dielec. film, a crystal-amorphous reversibly changable recording film, another dielec. film, a dielec. reflective film contg. dispersed metal fine ***particles*** , and protective film. The medium shows improved high-d. recording property.

ST ***optical*** recording ***disk*** rewritable ***near*** ***field*** light; metal ***particle*** dispersion reflection film

IT ***Optical*** ***disks***

(rewritable ***optical*** recording ***medium*** using ***near*** - ***field*** light)

IT 7429-90-5, Aluminum, uses 7440-22-4, ***Silver*** , uses 7440-57-5, ***Gold*** , uses

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(fine ***particles*** , reflective layer contg.; rewritable

optical recording ***medium*** using ***near*** -
field light)

IT 1314-98-3, Zinc sulfide, uses 1344-28-1, Alumina, uses 7631-86-9,
Silica, uses 12033-89-5, Silicon nitride, uses
RL: DEV (Device component use); USES (Uses)
• (reflective layer; rewritable ***optical*** recording
medium using ***near*** - ***field*** light)

L3 ANSWER 29 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:325279 CAPLUS

DN 137:13178

ED Entered STN: 01 May 2002

TI ***Super*** - ***resolution*** read-only memory disk with metal
nanoparticles or small aperture

AU Nomura, Akihiko; Otshi, Kenji; Kikukawa, Takashi; Fuji, Hiroshi; Tominaga,
Junji

CS Technology Development Division, Victor Company of Japan Ltd., Yokosuka,
Kanagawa, 239-8550, Japan

SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes &
Review Papers (2002), 41(3B), 1876-1879

CODEN: JAPNDE

PB Japan Society of Applied Physics

DT Journal

LA English

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

AB The authors attempted to increase the signal intensity of small pits the
sizes of which were smaller than the optical diffraction limit in
read-only memory (ROM) disks. For this purpose the authors employed a
granular film and a thermochromic film in their study. The reason for
using these films was to apply the ***super*** - ***resoln***
near - ***field*** structure (***super*** - ***RENS***)
model, which suggests that the signal intensity of very small marks is
increased by metal nanoparticles or a small aperture in the disk, to
super-ROM. The authors investigated the effect of adjoining these films
to a reflective layer on readout signals. It was found that the signal
intensity of very small pits was increased by both of these films, but the
mechanisms of increase were different.

ST ***superresoln*** read only memory disk ***RENS*** structure
model; super ROM ***optical*** ***disk*** ***RENS*** structure
model; metal nanoparticle super ROM ***optical*** ***disk*** ;
thermochromic film aperture metal nanoparticle thermochromic film aperture

IT Nanoparticles

Thermochromic materials

(application of super- ***RENS*** structure model to super-ROM disk
using granular film contg. ***Ag*** ***particles*** or
thermochromic film with small apertures)

IT Polycarbonates, uses

RL: DEV (Device component use); USES (Uses)

(substrate; application of super- ***RENS*** structure model to
super-ROM disk using granular film contg. ***Ag***

particles or thermochromic film with small apertures)

IT ***Optical*** ROM ***disks***

(***super*** -; ***super*** - ***resoln*** . read-only memory
disk with metal nanoparticles or small aperture)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses

RL: DEV (Device component use); USES (Uses)

(dielec. layer; application of super- ***RENS*** structure model to
super-ROM disk using granular film contg. ***Ag***

particles or thermochromic film with small apertures)

IT 7440-22-4, ***Silver*** , uses

RL: DEV (Device component use); USES (Uses)

(nanoparticles; application of super- ***RENS*** structure model to
super-ROM disk using granular film contg. ***Ag***

particles or thermochromic film with small apertures)

IT 7440-21-3, Silicon, uses

RL: DEV (Device component use); USES (Uses)

(reflective layer; application of super- ***RENS*** structure model
to super-ROM disk using granular film contg. ***Ag***

particles or thermochromic film with small apertures)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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(2) Kikukawa, T; Jpn J Appl Phys 2001, V40, P1624 CAPLUS
(3) Tominaga, J; Appl Phys Lett 1998, V73, P2078 CAPLUS
(4) Tominaga, J; Jpn J Appl Phys 2000, V39, P957 CAPLUS

L3 ANSWER 30 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:39635 CAPLUS

DN 136:126622

ED Entered STN: 16 Jan 2002

TI ***Optical*** ***disk*** provided with ***super*** -
resolution film and recording/reproducing method thereof

IN Ichihara, Katsutaro; Nagase, Toshihiko

PA Kabushiki Kaisha Toshiba, Japan

SO U.S., 13 pp.

CODEN: USXXAM

DT Patent

LA English

IC ICM G11B007-00

INCL 369275200

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

Section cross-reference(s): 73, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6339582	B1	20020115	US 1999-272777	19990319
PRAI	JP 1998-71691	A	19980320		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 6339582	ICM	G11B007-00
	INCL	369275200
	IPCI	G11B0007-00 [ICM,7]
	IPCR	G11B0007-00 [I,C]; G11B0007-0045 [I,A]; G11B0007-005 [I,A]; G11B0007-24 [I,A]; G11B0007-24 [I,C]; G11B0007-257 [I,A]
	NCL	369/275.200; 369/013.050; 369/118.000; 428/064.100
	ECLA	G11B007/0045R; G11B007/005R; G11B007/24; G11B007/24R; G11B007/257

AB The invention relates to an ***optical*** ***disk*** on and from
which information is recorded and reproduced by irradiating a light beam.
The ***optical*** ***disk*** is capable of ***super*** -
resoln . recording by forming a recording mark smaller than the
spot size of a recording beam defined by the wavelength of a light source
and the NA of a focusing lens. The ***optical*** ***disk*** has a
recording layer to which light is irradiated for recording/reproducing
information, and comprises a ***super*** - ***resoln*** . film for
recording, and a reflective film, that are formed on the side opposite to
the light- entering side with respect to the recording layer, and a
super - ***resoln*** . film for reprodn. formed on the light-
entering side with respect to the recording layer.

ST ***optical*** ***disk*** recording ***medium*** semiconductor
cadmium sulfide gallium telluride; antimony germanium telluride zinc
sulfide silica aluminum ***optical*** ***disk*** ; indium
silver sulfide chalcogenide semiconductor ***particle*** DVD
RAM disk

IT Semiconductor materials
(in manuf. of ***optical*** ***disk*** with improved
carrier-to-noise ratio and having ***super*** - ***resoln*** .
film contg. semiconductor ***particles***)

IT ***Optical*** ***disks***
(***optical*** ***disk*** having ***super*** - ***resoln***
. film contg. semiconductor ***particles***)

IT Magnetron sputtering
(***optical*** ***disk*** with improved carrier-to-noise ratio
and having ***super*** - ***resoln*** . film contg. semiconductor
particles formed by)

IT 409-21-2, Silicon carbide (SiC), uses 1306-23-6, Cadmium sulfide (CdS),
uses 1306-24-7, Cadmium selenide (CdSe), uses 1306-25-8, Cadmium
telluride (CdTe), uses 1315-09-9, Zinc selenide (ZnSe) 1317-36-8, Lead
oxide (PbO), uses 1317-38-0, ***Copper*** oxide (CuO), uses
12013-55-7, Calcium silicide (CaSi) 12024-10-1, Gallium sulfide (GaS)

12024-11-2, Gallium selenide (GaSe) 12024-14-5, Gallium telluride (GaTe)
 12025-32-0, Germanium sulfide (GeS) 12067-17-3 12136-26-4, Indium
 oxide (InO) 20859-73-8, Aluminum phosphide (AlP) 25152-52-7
 389805-86-1, Indium ***silver*** sulfide (InAgS) 389805-87-2,
 Cadmium germanium phosphide (CdGeP) 389805-89-4, Indium ***silver***
 silicide (InAgSi) 389805-90-7, Antimony ***silver*** sulfide (SbAgS)
 389805-91-8, Aluminum ***copper*** sulfide (AlCuS)
 RL: TEM (Technical or engineered material use); USES (Uses)
 (***optical*** ***disk*** having ***super*** - ***resoln***
 . film contg. semiconductor ***particles***)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Anon; JP 05225611 1993
- (2) Anon; JP 772567 1995
- (3) Asai; US 5474874 A 1995
- (4) Ichihara; US 6181650 B1 2001 CAPLUS
- (5) Ichihara; US 6187406 B1 2001
- (6) Kawanishi; US 5591500 A 1997
- (7) Miyake; US 6111822 A 2000 CAPLUS
- (8) Nishimura; US 5717662 A 1998
- (9) Spruit; US 5153873 A 1992

L3 ANSWER 31 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2001:729883 CAPLUS

DN 135:280613

ED Entered STN: 05 Oct 2001

TI ***Optical*** ***disk*** having ***super*** - ***resolution***
 film comprising semiconductor ***particles*** dispersed in polymer
 matrix

IN Todorii, Kenji; Nagase, Toshihiko; Ichihara, Katsutaro; Kihara, Naoko

PA K. K. Toshiba, Japan

SO Eur. Pat. Appl., 32 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM G02F001-355

ICS G02F001-361; G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1139161	A1	20011004	EP 2001-302981	20010329
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001273681	A2	20011005	JP 2000-92160	20000329
	TW 501124	B	20020901	TW 2001-90106379	20010319
	US 2001038900	A1	20011108	US 2001-819621	20010329
PRAI	JP 2000-92160	A	20000329		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1139161	ICM	G02F001-355
	ICS	G02F001-361; G11B007-24
	IPCI	G02F0001-355 [ICM,6]; G02F0001-361 [ICS,6]; G11B0007-24 [ICS,6]
	IPCR	G02F0001-35 [I,C]; G02F0001-355 [I,A]; G11B0007-24 [I,A]; G11B0007-24 [I,C]; G11B0007-243 [I,A]; G11B0007-247 [I,A]; G11B0007-251 [I,A]; G11B0007-257 [I,A]
	ECLA	G02F001/355Q; G11B007/24R; G11B007/243; G11B007/247; G11B007/251; G11B007/257
JP 2001273681	IPCI	G11B0007-24 [ICM,7]
TW 501124	IPCI	G11B0007-24 [ICM,7]
US 2001038900	IPCI	B32B0003-02 [ICM,7]; G11B0007-26 [ICS,7]; G11B0005-84 [ICS,7]; G11B0003-70 [ICS,7]
	IPCR	G02F0001-35 [I,C]; G02F0001-355 [I,A]; G11B0007-24 [I,A]; G11B0007-24 [I,C]; G11B0007-243 [I,A]; G11B0007-247 [I,A]; G11B0007-251 [I,A]; G11B0007-257 [I,A]
	NCL	428/064.400
	ECLA	G02F001/355Q; G11B007/24R; G11B007/243; G11B007/247;

AB An ***optical*** ***disk*** from which recorded data are read out by means of light irradiation. has a substrate having recording pits as data on a surface, and stacked films formed on the substrate. The stacked films contain a ***super*** - ***resoln*** . film of a polymer matrix and semiconductor ***particles*** having an org. group covalently bonded thereto, and a reflective film. The ***super*** - ***resoln*** . film and the reflective film are provided in this order from a light incident side. The object of the present invention is to further improve the ***super*** - ***resoln*** . characteristics in a ***super*** - ***resoln*** . film using semiconductor ***particles*** so as to increase the recording d. of an ***optical*** ***disk*** .

ST ***optical*** ***disk*** ***superresoln*** film semiconductor ***particle*** polymer matrix; DVD CDR semiconductor ***particle*** polymer matrix ***superresoln*** film

IT ***Optical*** ***disks***
(***optical*** ***disk*** having ***super*** - ***resoln*** . film comprising semiconductor ***particles*** dispersed in polymer matrix partially bonded covalently to semiconductor ***particles***)

IT 163442-67-9, Starburst 4th Generation
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(dendritic; ***optical*** ***disk*** having ***super*** - ***resoln*** . film comprising semiconductor ***particles*** dispersed in polymer matrix partially bonded covalently to semiconductor ***particles***)

IT 3385-94-2, Bis(trimethylsilyl) sulfide 4099-46-1, Bis(trimethylsilyl) selenide
RL: NUU (Other use, unclassified); USES (Uses)
(***optical*** ***disk*** having ***super*** - ***resoln*** . film comprising semiconductor ***particles*** dispersed in polymer matrix partially bonded covalently to semiconductor ***particles***)

IT 919-30-2, Aminopropyltriethoxy-silane 1306-24-7, Cadmium selenide, processes 1306-25-8, Cadmium telluride, processes 1314-98-3, Zinc sulfide, processes 7758-89-6, ***Copper*** chloride 9011-14-7, Polymethyl methacrylate 112074-07-4, Cadmium selenide sulfide (CdSe0.4S0.6) 117727-56-7, Cadmium selenide sulfide (CdSe0.9S0.1) 163442-71-5D, Starburst 8th Generation, hydroxy terminated
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(***optical*** ***disk*** having ***super*** - ***resoln*** . film comprising semiconductor ***particles*** dispersed in polymer matrix partially bonded covalently to semiconductor ***particles***)

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

- (1) Anon; PATENT ABSTRACTS OF JAPAN 1994, V018(278), PP-1743
- (2) Hitachi Ltd; EP 0316909 A 1989 CAPLUS
- (3) Hitachi Maxell Ltd; JP 06044609 A 1994
- (4) Ibm; EP 0431973 A 1991 CAPLUS
- (5) Nakamura, S; US 5824240 A 1998
- (6) Nosaka, Y; JOURNAL OF APPLIED POLYMER SCIENCE 1993, V47(10), P1773 CAPLUS
- (7) Pioneer Electronic Corp; EP 0580346 A 1994 CAPLUS

L3 ANSWER 32 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2001:559617 CAPLUS

DN 135:129632

ED Entered STN: 03 Aug 2001

TI Recording ***medium*** , ***near*** ***field*** ***optical*** head, optical recording device, and method of manufacturing thereof

IN Oumi, Manabu; Kasama, Nobuyuki; Maeda, Hidetaka; Kato, Kenji; Niwa, Takashi; Mitsuoka, Yasuyuki; Shinohara, Yoko

PA Seiko Instruments Inc., Japan

SO Eur. Pat. Appl., 18 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM G11B007-24

ICS G11B007-26; G11B007-12; G11B007-22

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other

Reprographic Processes)

Section cross-reference(s): 47, 73

*FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1120780	A2	20010801	EP 2001-300702	20010126
	EP 1120780	A3	20030409		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001283466	A2	20011012	JP 2001-1677	20010109
	US 2001030938	A1	20011018	US 2001-770072	20010125
	US 6697322	B2	20040224		
	US 2004086808	A1	20040506	US 2003-691772	20031023
PRAI	JP 2000-17557	A	20000126		
	JP 2001-1677	A	20010109		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1120780	ICM	G11B007-24
	ICS	G11B007-26; G11B007-12; G11B007-22
	IPCI	G11B0007-24 [ICM,6]; G11B0007-26 [ICS,6]; G11B0007-12 [ICS,6]; G11B0007-22 [ICS,6]
	IPCR	G11B0007-12 [I,A]; G11B0007-12 [I,C]; G11B0007-125 [I,A]; G11B0007-125 [I,C]; G11B0007-22 [I,A]; G11B0007-22 [I,C]; G11B0007-24 [I,A]; G11B0007-24 [I,C]; G11B0007-26 [I,A]; G11B0007-26 [I,C]
	ECLA	G11B007/12F; G11B007/125D; G11B007/22; G11B007/24; G11B007/26
JP 2001283466	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; G01N0013-10 [ICS,7]; G01N0013-14 [ICS,7]; G11B0007-12 [ICS,7]; G11B0007-22 [ICS,7]; G11B0007-26 [ICS,7]; G12B0021-06 [ICS,7]
US 2001030938	IPCI	G11B0007-24 [ICM,7]; G11B0007-00 [ICS,7]; G11B0015-64 [ICS,7]; G11B0017-32 [ICS,7]
	IPCR	G11B0007-12 [I,A]; G11B0007-12 [I,C]; G11B0007-125 [I,A]; G11B0007-125 [I,C]; G11B0007-22 [I,A]; G11B0007-22 [I,C]; G11B0007-24 [I,A]; G11B0007-24 [I,C]; G11B0007-26 [I,A]; G11B0007-26 [I,C]
	NCL	369/300.000
	ECLA	G11B007/12F; G11B007/22; G11B007/24; G11B007/26; G11B007/125D
US 2004086808	IPCI	G03C0005-00 [ICM,7]
	IPCR	G11B0007-12 [I,A]; G11B0007-12 [I,C]; G11B0007-125 [I,A]; G11B0007-125 [I,C]; G11B0007-22 [I,A]; G11B0007-22 [I,C]; G11B0007-24 [I,A]; G11B0007-24 [I,C]; G11B0007-26 [I,A]; G11B0007-26 [I,C]
	NCL	430/321.000
	ECLA	G11B007/12F; G11B007/125D; G11B007/22; G11B007/24; G11B007/26

AB The invention relates to a recording ***medium*** , ***near*** -
 field ***optical*** head, an optical recording device capable
 of utilizing ***near*** - ***field*** light to record and reproduce
 information in a highly precise manner. The invention provides an
 information recording/reprodn. device for implementing high d.
 information recording ***medium*** with ***near*** -
 field light, and ***particularly*** to a ***near*** -
 field optical head with high optical efficiency and a manufg.
 method for it. This is achieved by enabling an energy propagation
 mechanism via plasmon by forming a layer dispersed with metal
 particulate at a microscopic opening generating ***near*** -
 field light, and therefore, increase optical efficiency.

ST recording field optical head video device ***silver***

IT Recording apparatus
 (recording ***medium*** comprising ***near*** - ***field***
 optical head contg. silica film scattered with ***silver***
 particles)

IT ***Optical*** memory devices
 Surface plasmon
 (recording ***medium*** comprising ***near*** - ***field***
 optical head contg. silica layer scattered with ***silver***
 particles)

IT 7440-22-4P, ***Silver*** , preparation 7631-86-9P, Silica,

preparation
RL: DEV (Device component use); IMF (Industrial manufacture); PREP
(Preparation); USES (Uses)
* (recording ***medium*** comprising ***near*** - ***field***
optical head contg. silica layer scattered with ***silver***
particles)

L3 ANSWER 33 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:360299 CAPLUS
DN 134:346532
ED Entered STN: 18 May 2001
TI ***Near*** - ***field*** crystal optical memory
IN Moscovitch, Marko
PA Georgetown University, USA
SO PCT Int. Appl., 21 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G11B007-00
ICS G11B007-24; C09K011-00
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)
Section cross-reference(s): 73
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001035398	A1	20010517	WO 2000-US30802	20001110
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	AU 2001015922	A5	20010606	AU 2001-15922	20001110
	US 2002167887	A1	20021114	US 2002-143497	20020510
PRAI	US 1999-164574P	P	19991110		
	WO 2000-US30802	W	20001110		

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	WO 2001035398	ICM	G11B007-00
		ICS	G11B007-24; C09K011-00
		IPCI	G11B0007-00 [ICM,7]; G11B0007-24 [ICS,7]; C09K0011-00 [ICS,7]
		IPCR	C09K0011-65 [I,A]; C09K0011-65 [I,C]; G11B0007-00 [I,C]; G11B0007-0045 [I,A]; G11B0007-005 [I,A]; G11B0007-24 [I,C]; G11B0007-243 [I,A]
		ECLA	C09K011/65D; G11B007/0045; G11B007/005; G11B007/243
AU	2001015922	IPCI	G11B0007-00 [ICM,7]; G11B0007-24 [ICS,7]; C09K0011-00 [ICS,7]
US	2002167887	IPCI	G11B0007-00 [ICM,7]
		IPCR	G11B0007-00 [I,C]; G11B0007-0045 [I,A]; G11B0007-005 [I,A]; G11B0007-24 [I,A]; G11B0007-24 [I,C]; G11B0007-243 [I,A]
		NCL	369/121.000
		ECLA	G11B007/0045; G11B007/005; G11B007/24; G11B007/243

AB An optical data storage system, ***particularly*** suited for use in the information and entertainment industries. A ***near*** - ***field*** crystal optical memory (NCOM) system includes an electron trapping media, ***particularly*** an .alpha.-Al2O3:C crystal or ***Cu*** +-doped fused quartz, that is sensitive to light. Information is stored and retrieved using blue and green laser light, resp. High data d. is achieved using a ***near*** - ***field*** scanning optical microscopy (NSOM) technique, by placing the optical probe in a very close proximity to the crystal surface. The storage system enables ultra-high data densities reaching 2500 Gb/in2.

ST ***near*** ***field*** crystal optical memory microscopy;
optical ***disk*** electron trapping material
IT Microscopy

(***near*** - ***field*** ; reading and writing ***near*** -
field crystal optical memory)

IT * ***Optical*** ***disks***
(writing ***near*** - ***field*** crystal optical memory)

IT 7440-44-0, Carbon, uses 17493-86-6, ***Copper*** ion(1+), uses
RL: NUU (Other use, unclassified); USES (Uses)
(dopant; electron trapping material in recording medium of ***near***
- ***field*** crystal optical memory doped with)

IT 14808-60-7, Quartz, uses
RL: DEV (Device component use); USES (Uses)
(doped with ***Copper*** (I) ion; electron trapping material in
recording medium of ***near*** - ***field*** crystal optical
memory)

IT 1344-28-1, .alpha.-Alumina, uses
RL: DEV (Device component use); USES (Uses)
(doped with carbon; electron trapping material in recording medium of
near - ***field*** crystal optical memory)

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

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(3) Geyer, F; US 4561086 A 1985
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(5) Jaek, I; RADIATION MEASUREMENTS 1997, V27(3), P473 CAPLUS
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V84(1-4), P189 CAPLUS
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(8) Vo-Dinh, T; US 5325342 A 1994

L3 ANSWER 34 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:302116 CAPLUS
DN 135:99756
ED Entered STN: 29 Apr 2001
TI ***Near*** - ***field*** optical simulation of ***super*** -
resolution ***near*** - ***field*** structure disks

AU Nakano, Takashi; Yamakawa, Yuzo; Tominaga, Junji; Atoda, Nobufumi
CS Advanced Optical Memory Group, National Institute for Advanced
Interdisciplinary Research (NAIR), Tsukuba, 305-8562, Japan
SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes &
Review Papers (2001), 40(3B), 1531-1535
CODEN: JAPNDE; ISSN: 0021-4922
PB Japan Society of Applied Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)
Section cross-reference(s): 73

AB The authors describe the optical properties of readout signals from
light-scattering-center ***super*** - ***resoln*** . ***near*** -
field structure disks by a numerical simulation using a
3-dimensional finite-difference time-domain method (FDTD). Since the
generation process of the ***near*** - ***field*** readout signals
has a relation between the direction of the mark train and the
polarization direction of incident light, the optical properties of
readout ***near*** - ***field*** signals strongly depended on the
incident light polarization. The land and groove structure, and the
scattering center size also influenced the readout signals.

ST ***disk*** ***optical*** ***near*** ***field***
super ***resoln*** polarized laser radiation; zinc sulfide
optical ***disk*** ***near*** ***field***
super ***resoln*** polarized; ***silver*** oxide
optical ***disk*** ***near*** ***field***
super ***resoln*** polarized; silica ***optical***
disk ***near*** ***field*** ***super*** ***resoln***
polarized; polycarbonate ***optical*** ***disk*** ***near***
field ***super*** ***resoln*** polarized; plasmon
optical ***disk*** ***near*** ***field***
super ***resoln*** polarized; antimony germanium telluride
optical ***disk*** ***near*** ***field***
super ***resoln***

IT Laser radiation scattering
Plasmon

Polarized laser radiation
 (***near*** - ***field*** optical simulation of ***super*** -
 resoln . ***near*** - ***field*** structure disks)

IT Polycarbonates, properties
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (***near*** - ***field*** optical simulation of ***super*** -
 resoln . ***near*** - ***field*** structure disks)

IT ***Optical*** ***disks***
 (***super*** - ***resoln*** . ***near*** - ***field*** ;
 near - ***field*** optical simulation of ***super*** -
 resoln . ***near*** - ***field*** structure disks)

IT 1314-98-3, Zinc monosulfide, properties 7631-86-9, Silica, properties
 16150-49-5, antimony germanium telluride sb2ge2te5 20667-12-3,
 Silver oxide
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (***near*** - ***field*** optical simulation of ***super*** -
 resoln . ***near*** - ***field*** structure disks)

IT 7440-22-4, ***Silver*** , properties
 RL: DEV (Device component use); MOA (Modifier or additive use); PRP
 (Properties); USES (Uses)
 (***particle*** ; ***near*** - ***field*** optical simulation
 of ***super*** - ***resoln*** . ***near*** - ***field***
 structure disks)

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
 (1) Betzig, E; Appl Phys Lett 1992, V61, P142 CAPLUS
 (2) Fuji, H; Jpn J Appl Phys 2000, V39, P980 CAPLUS
 (3) Furukawa, H; Opt Commun 1996, V132, P170 CAPLUS
 (4) Issiki, F; Appl Phys Lett 2000, V76, P804 CAPLUS
 (5) Judkins, J; J Opt Soc Am A 1995, V12, P1974 CAPLUS
 (6) Martin, Y; Appl Phys Lett 1997, V71, P1 CAPLUS
 (7) Milster, T; Opt Lett 1999, V24, P605
 (8) Nakano, T; Appl Phys Lett 1999, V75, P151 CAPLUS
 (9) Novotny, L; J Opt Soc Am A 1994, V11, P1768
 (10) Terris, B; Appl Phys Lett 1994, V65, P388
 (11) Tominaga, J; Appl Phys Lett 1998, V73, P2078 CAPLUS
 (12) Yatsui, T; Opt Lett 2000, V25, P1279 CAPLUS
 (13) Yoshikawa, H; Opt Lett 2000, V25, P67

L3 ANSWER 35 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2000:858123 CAPLUS
 DN 134:170759
 ED Entered STN: 07 Dec 2000

TI Light-scattering-mode ***super*** - ***resolution*** ***near*** -
 field structure (***super*** - ***RENS***) for super-density
 data storage

AU Tominaga, J.; Fuji, H.; Nakano, T.; Men, L.; Atoda, N.
 CS Advanced Optical Memory Group, National Institute for Advanced
 Interdisciplinary, Tsukuba, 305-8562, Japan
 SO Near-Field Optics: Principles and Applications, Asia-Pacific Workshop on
 Near Field Optics, 2nd, Beijing, China, Oct. 20-23, 1999 (2000), Meeting
 Date 1999, 240-245. Editor(s): Zhu, Xing; Ohtsu, Motoichi. Publisher:
 World Scientific Publishing Co. Pte. Ltd., Singapore, Singapore.
 CODEN: 69ARLV

DT Conference
 LA English
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)

AB A light-scattering-mode ***super*** - ***resoln*** . ***near*** -
 field structure (***super*** - ***RENS***) is proposed by
 using a ***silver*** oxide layer instead of an Sb layer. The
 silver oxide layer, which was produced by r.f. reactive sputtering
 with a ***Ag*** target and the gas mixt. of Ar and oxygen, showed a
 reversible chem. reaction (2Ag2O .dblharw. 4Ag + O2) to increase the
 reflection. The decompd. ***Ag*** ***particles*** worked as light
 scattering centers like a aperture-less NSOM. The authors could record
 and retrieve small marks until 100 nm size at more than the double speed
 of a super- ***RENS*** disk using an Sb layer.

ST light scattering ***super*** ***resoln*** ***near***
 field structure data storage; ***silver*** oxide
 optical recording ***disk*** super ***RENS*** structure

IT ***Optical*** ***disks***

(light-scattering-mode ***super*** - ***resoln*** . ***near***
 - ***field*** structure ***optical*** ***disk*** using chem.
 reaction of Ag2O layer)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses
 RL: DEV (Device component use); USES (Uses)
 . (dielec. layer; light-scattering-mode ***super*** - ***resoln*** .
 near - ***field*** structure ***optical*** ***disk***
 using chem. reaction of Ag2O layer)

IT 16150-49-5, Germanium antimony telluride (Ge2Sb2Te5)
 RL: DEV (Device component use); USES (Uses)
 (light-scattering-mode ***super*** - ***resoln*** . ***near***
 - ***field*** structure ***optical*** ***disk*** using chem.
 reaction of Ag2O layer)

IT 7440-22-4, ***Silver***, processes
 RL: DEV (Device component use); FMU (Formation, unclassified); PEP
 (Physical, engineering or chemical process); FORM (Formation,
 nonpreparative); PROC (Process); USES (Uses)
 (light-scattering-mode ***super*** - ***resoln*** . ***near***
 - ***field*** structure ***optical*** ***disk*** using chem.
 reaction of Ag2O layer)

IT 20667-12-3, ***Silver*** oxide (Ag2O)
 RL: DEV (Device component use); PEP (Physical, engineering or chemical
 process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES
 (Uses)
 (light-scattering-mode ***super*** - ***resoln*** . ***near***
 - ***field*** structure ***optical*** ***disk*** using chem.
 reaction of Ag2O layer)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Beztig, E; Science 1992, V257, P189
- (2) Fischer, U; Phys Rev Lett 1989, V62, P458 CAPLUS
- (3) Haratani, S; J Appl Phys 1994, V76, P1297 CAPLUS
- (4) Inouye, Y; Opt Lett 1994, V19, P159
- (5) Milster, T; Jpn J Appl Phys 1999, V38, P1793 CAPLUS
- (6) Schmidt, A; Thin Solid Films 1996, V281-282, P105 CAPLUS
- (7) Tominaga, J; Appl Phys Lett 1998, V73, P2078 CAPLUS
- (8) Tominaga, J; Jpn J Appl Phys 1992, V31, P2757 CAPLUS
- (9) Tominaga, J; Jpn J Appl Phys 1998, V37, PL1323

L3 ANSWER 36 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1999:1131 CAPLUS

DN 130:83385

ED Entered STN: 04 Jan 1999

TI Application of laser diagnostic techniques to characterize the spray
 issued from a pMDI

AU Dunbar, C. A.; Watkins, A. P.; Miller, J. F.

CS Thermo-Fluids Division, Department of Mechanical Engineering UMIST,
 Manchester, M60 1QD, UK

SO Proceedings of the International Conference on Liquid Atomization and
 Spray Systems, 7th, Seoul, Aug. 18-22, 1997 (1997), Volume 1, 641-648
 Publisher: Institute for Liquid Atomization and Spray Systems, Seoul, S.
 Korea.

CODEN: 67BVAN

DT Conference

LA English

CC 48-3 (Unit Operations and Processes)

Section cross-reference(s): 63

AB The pressurized metered-dose inhaler (pMDI) is a compact pressurized spray
 dispenser designed for the oral inhalation of multiple doses of finely
 dispersed drug in the treatment of various pulmonary diseases, the most
 common being asthma. This research was concerned with the exptl.
 investigation of the spray issued from a pMDI and has been motivated by
 the urgent need to find suitable replacements to the environmentally
 destructive CFC-based propellants currently used in the device and to
 further the understanding of the mechanisms of atomization. The exptl.
 work was conducted using 1-D phase-Doppler ***particle*** analyzer
 (PDPA), yielding the most detailed temporal and spatial anal. of the pMDI
 spray to date. Two formulations were studied to compare the performance
 of an "ozone-friendly" hydrofluoroalkane propellant against that of a
 traditional placebo CFC-based mixt. The PDPA anal. was complemented by a
 visual investigation of the ***near*** -orifice flow ***field***
 using ***copper*** laser strobe microcinematog. in an attempt to

obtain information on the primary atomization process of the pMDI. This work was conducted in parallel with the theor. investigation of the spray issued from a pMDI.

ST inhaler spray dispenser fluorocarbon propellant; asthma inhaler spray fluorocarbon propellant

IT Hydrocarbons, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (chlorofluorocarbons; laser diagnostic techniques in characterization of spray from pressurized metered dose inhalers)

IT Evaporation
 (flash; laser diagnostic techniques in characterization of spray from pressurized metered dose inhalers)

IT Hydrocarbons, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (fluoro; laser diagnostic techniques in characterization of spray from pressurized metered dose inhalers)

IT Drug delivery systems
 (inhalants; laser diagnostic techniques in characterization of spray from pressurized metered dose inhalers)

IT ***Medical*** goods
 (inhalers; ***laser*** diagnostic techniques in characterization of spray from pressurized metered dose inhalers)

IT Asthma
 Atomizing (spraying)
 Lung, disease
 Propellants (sprays and foams)
 (laser diagnostic techniques in characterization of spray from pressurized metered dose inhalers)

IT Drops
 (size; laser diagnostic techniques in characterization of spray from pressurized metered dose inhalers)

IT Nozzles
 (spray; laser diagnostic techniques in characterization of spray from pressurized metered dose inhalers)

IT 75-69-4, R-11 75-71-8, R-12 811-97-2, R-134a
 RL: NUU (Other use, unclassified); USES (Uses)
 (laser diagnostic techniques in characterization of spray from pressurized metered dose inhalers)

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Arai, M; Proc ICLASS-94 Paper II-8 1994, P286 CAPLUS
- (2) Atkins, P; Pharm Tech 1992, V16(8), P26
- (3) Brown, R; A I Ch E J 1962, V8(2), P149
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- (5) Dhand, R; J Pharm Pharmacol 1988, V40, P429 CAPLUS
- (6) Domnick, J; Int J Multiphase Flow 1995, V21(6), P1047 CAPLUS
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- (8) Gorman, W; Pharm Tech 1993, V17(2), P34
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- (10) Niven, R; Pharm Tech 1993, V17(1), P72
- (11) Ranucci, J; Pharm Tech 1992, P109
- (12) Saffman, M; Appl Opt 1987, V26(13), P2592 CAPLUS
- (13) Wiener, M; J Soc Cos Chem 1958, V7, P204

L3 ANSWER 37 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1997:592232 CAPLUS

DN 127:198119

ED Entered STN: 17 Sep 1997

TI Deposition-preventing part for physical vapor deposition apparatus

IN Uchiyama, Naoki; Mashima, Munenori; Kinoshita, Makoto; Hashimoto, Yorishige

PA Mitsubishi Materials Corporation, Japan

SO Eur. Pat. Appl., 19 pp.
 CODEN: EPXXDW

DT Patent

LA English

IC ICM C23C014-04

CC 75-1 (Crystallography and Liquid Crystals)
 Section cross-reference(s): 74

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	EP 790327	A1	19970820	EP 1997-102254	19970212
	EP 790327	B1	19990728		
	R: DE, ES, FR, GB, IT, NL				
	JP 09316643	A2	19971209	JP 1996-180739	19960710
	TW 402647	B	20000821	TW 1996-85112906	19961022
	US 5954929	A	19990921	US 1996-738660	19961030
	SG 77122	A1	20001219	SG 1996-10993	19961030
PRAI	JP 1996-27584	A	19960215		
	JP 1996-68123	A	19960325		
	JP 1996-180739	A	19960710		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 790327	ICM	C23C014-04
	IPCI	C23C0014-04 [ICM,6]
	IPCR	C23C0014-04 [I,A]; C23C0014-04 [I,C]; G11B0007-26 [I,A]; G11B0007-26 [I,C]
JP 09316643	ECLA	C23C014/04B; G11B007/26
	IPCI	C23C0014-56 [ICM,6]; C23C0030-00 [ICS,6]; G11B0005-85 [ICS,6]
TW 402647	IPCI	C23C0008-40 [ICM,7]; C23C0030-00 [ICS,7]; C23F0004-00 [ICS,7]
US 5954929	IPCI	C23C0014-00 [ICM,6]
	IPCR	C23C0014-04 [I,A]; C23C0014-04 [I,C]; G11B0007-26 [I,A]; G11B0007-26 [I,C]
	NCL	204/298.110; 118/720.000; 118/721.000
	ECLA	C23C014/04B; G11B007/26
SG 77122	IPCI	C23C0014-04 [ICM,7]
AB	A deposition-preventing part, ***particularly*** a ***masking*** tool, is used over an area to be protected from adhesion of a phys. vapor deposited film in phys. vapor deposition app. used to form films of metals, ***particularly*** noble metals, on CD-ROM, CD-R, or CD-E substrates. A solder-plated ***Cu*** wire, a solder-plated ***Cu*** foil tape, an Al foil tape, and/or a synthetic resin tape are attached, in a peelable manner, to a solder film formed on the surface of the substrate of a deposition-preventing part such as a ***masking*** tool, which has a surface roughness of 0.01-1 .mu.m when expressed as the arithmetic mean roughness defined according to JIS B 0601, a thickness of 5-100 .mu.m, and a m.p. of 100-450.degree..	
ST	deposition prevention phys vapor deposition app; ***masking*** tool phys vapor deposition app; ***compact*** ***disk*** phys vapor deposition ***masking***	
IT	Noble metals	
	RL: PEP (Physical, engineering or chemical process); PROC (Process) (deposition-preventing part for app. for phys. vapor deposition of)	
IT	Solders	
	(deposition-preventing part for phys. vapor deposition app. contg. ***copper*** wire plated with)	
IT	***Optical*** ROM ***disks***	
	(deposition-preventing part for phys. vapor deposition app. for coating of)	
IT	Vapor deposition process	
	(phys.; deposition-preventing part for app. for)	
IT	7440-57-5, ***Gold***, processes	
	RL: PEP (Physical, engineering or chemical process); PROC (Process) (deposition-preventing part for app. for phys. vapor deposition of)	
IT	7429-90-5, Aluminum, processes 7440-50-8, ***Copper***, processes	
	RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (deposition-preventing part for phys. vapor deposition app. contg.)	
IT	7439-92-1, Lead, processes 7440-31-5, Tin, processes 12630-22-7 37256-13-6 39403-06-0, Lead 95, tin 5 66994-84-1	
	RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses) (solder; deposition-preventing part for phys. vapor deposition app. contg.)	

L3 ANSWER 38 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1990:207361 CAPLUS

DN 112:207361

ED Entered STN: 26 May 1990

TI Formation of given distributions of ***particles*** in an

inhomogeneous ***medium*** in a ***laser*** radiation field
AU Zakharov, S. D.; Zemskov, K. I.; Kazaryan, M. A.; Korotkov, N. P.
CS USSR
SO Kratkie Soobshcheniya po Fizike (1989), (9), 8-10
CODEN: KRSFAU; ISSN: 0455-0595
DT Journal
LA Russian
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
AB A glass cell contg. aq. suspension of the transparent latex
particles (diam. 2 .mu.m; concn. 105 mm-3) served as the 2nd
mirror in the cavity of ***Cu*** vapor laser. The feedback mirror
contained a ***mask*** which produced a desired laser beam intensity
distribution on the suspension-contg. cell wall. The peak power in the
illuminated parts reached 108 W/cm2. Pulse repetition frequency 10 kHz,
pulse duration 20 ns, .lambda. = 0.51 and 0.58 .mu.m. Distribution of the
particles (and consequently d., and refractive index) took place
on the cell wall under laser irradiation, the form of this distribution was
controlled by the feedback mirror ***mask***. Complete filling of the
exposed cell areas by the ***particles*** took place within .apprx.10
min. The anal. of the suspension mobility during the process show that
among the forces acting in the medium light pressure exceeded gradient
force (related with the beam heterogeneity), and the former was detd. as 6
.times. 10-4 dyne.
ST suspension ***particle*** distribution laser cavity
IT Laser radiation, chemical and physical effects
(formation of desired distribution of transparent ***particles***
in aq. suspension by)
IT Latex
Suspensions
(light-induced controlled and desired distribution of transparent
particles of, in laser radiation field)
IT Density
(profile of, formation of desired distributions of transparent
particles in inhomogeneous ***medium*** in ***laser***
radiation field in relation to)
IT Mirrors
(laser, from aq. suspension of transparent ***particles***,
formation of desired and controlled distribution of ***particles***
in)
IT Lasers
(mirrors, from aq. suspension of transparent ***particles***,
formation of desired and controlled distribution of ***particles***
in)
IT 7440-50-8, ***Copper***, uses and miscellaneous
RL: USES (Uses)
(laser based on vapor of, controlled distribution of transparent
particles in aq. suspensions in cavity of)
L3 ANSWER 39 OF 61 INSPEC (C) 2006 IEE on STN
AN 2006:8794043 INSPEC
TI ***Super*** - ***resolution*** frequency-dependent efficiency of
near - ***field*** ***optical*** ***disks*** with
silver nanoparticles
AU Ming-Yaw Ng; Wei-Chih Liu (Dept. of Phys., Nat. Taiwan Normal Univ.,
Taipei, Taiwan)
SO Optics Express (14 Nov. 2005), vol.13, no.23, 35 refs.
CODEN: OPEXFF, ISSN: 1094-4087
Price: 1094-4087/2005/\$15.00
Collection URL: <http://www.opticsexpress.org/>
Published by: Opt. Soc. America, USA
DT Journal
TC Theoretical
CY United States
LA English
AB The ***super*** - ***resolution*** capability of the AgOx-type
super - ***resolution*** ***near*** - ***field***
structure disk with ***silver*** nanoparticles was studied using
finite-difference time-domain method at different incident light
frequencies. The ***near*** ***fields*** exhibited strongly local
field enhancement around ***silver*** nanoparticles in the AgOx layer
due to localized surface plasmon. The subwavelength recording marks

smaller than $\lambda/10$ were distinguishable since the metallic nanoparticles with high localized fields transferred evanescent waves to detectable signals in the far field. The far-field signals from random ***silver*** nanoparticles displayed similar behaviors as those from single nanoparticle and red-shifts of peak frequencies from - ***particle*** - ***particle*** interaction

CC A4280T Optical storage and retrieval; A0260 Numerical approximation and analysis; A7320M Collective excitations (surface states); B4120 Optical storage and retrieval; B0290Z Other numerical methods

CT finite difference time-domain analysis; nanoparticles; ***optical*** ***disc*** storage; ***silver*** compounds; surface plasmons

ST near-field optical disks; frequency-dependent efficiency; silver nanoparticles; finite-difference time-domain method; super-resolution; surface plasmon; AgO

CHI AgO bin, Ag bin, O bin

ET O; Ag; Ag*O; AgOx; Ag cp; cp; O cp

L3 ANSWER 40 OF 61 INSPEC (C) 2006 IEE on STN

AN 2006:8693796 INSPEC

TI Enhanced scattering of random-distribution nanoparticles and evanescent ***field*** in ***super*** - ***resolution*** ***near*** - ***field*** structure

AU Li, J.M.; Shi, L.P.; Lim, K.G.; Miao, X.S.; Yang, H.X.; Chong, T.C. (Data Storage Inst., Singapore, Singapore)

SO Japanese Journal of Applied Physics, Part 1 (Regular Papers, Short Notes & Review Papers) (May 2005), vol.44, no.5B, p. 3620-2, 10 refs. CODEN: JAPNDE, ISSN: 0021-4922 SICI: 0021-4922(200505)44:5BL.3620:ESRD;1-M Published by: Japan Soc. Appl. Phys, Japan

DT Journal

TC Theoretical; Experimental

CY Japan

LA English

AB This study focuses on evanescent fields induced by ***silver*** nanoparticles in the ***mask*** layer and in the interfaces in an AgOx-type ***super*** - ***resolution*** ***near*** - ***field*** structure (***super*** - ***RENS***). The finite-difference time-domain (FDTD) method is used to analyze the scattering fields from the localized surface plasmons of ***silver*** nanoparticles. It has been found that the spatial extension of the evanescent field is very short along the thickness direction of the layers, and the 3-dimensional coupling patterns of the evanescent fields from the individual ***particles*** are irregular. The study also found that the intensity of the evanescent fields is dependent on the ***silver*** concentration

CC A4280T Optical storage and retrieval; A7320M Collective excitations (surface states); A0260 Numerical approximation and analysis

CT finite difference time-domain analysis; insulating thin films; ***masks*** ; nanoparticles; ***optical*** ***disc*** storage; ***silver*** ; ***silver*** compounds; surface plasmons

ST random-distribution nanoparticle scattering; evanescent field; super-resolution near-field structure; silver nanoparticles; mask layer; finite-difference time-domain method; FDTD; localized surface plasmons; 3-dimensional coupling patterns; evanescent field intensity; silver concentration; Ag; AgOx

CHI Ag el; AgO int, Ag int, O int, AgO bin, Ag bin, O bin

ET O; Ag; Ag*O; AgO; Ag cp; cp; O cp; AgOx

L3 ANSWER 41 OF 61 INSPEC (C) 2006 IEE on STN

AN 2006:8693746 INSPEC

TI Signal enhancement of ***super*** ***resolution*** enhanced ***near*** - ***field*** structure disc by ***silver*** nano-***particles***

AU Kurihara, K.; Arai, T.; Nakano, T.; Tominaga, J. (Center for Appl. Near-Field Opt. Res., Nat. Inst. of Adv. Ind. Sci. & Technol., Ibaraki, Japan)

SO Japanese Journal of Applied Physics, Part 1 (Regular Papers, Short Notes & Review Papers) (May 2005), vol.44, no.5B, p. 3353-5, 13 refs. CODEN: JAPNDE, ISSN: 0021-4922 SICI: 0021-4922(200505)44:5BL.3353:SESR;1-B Published by: Japan Soc. Appl. Phys, Japan

DT Journal

TC Practical; Experimental
 CY Japan
 LA English
 AB We propose a carrier-to-noise ratio (CNR) increment method for a
 super ***resolution*** enhanced ***near*** - ***field***
 structure (super- ***RENS***) with ***silver*** nanoparticles. The
 silver nanoparticles were fabricated by the RF magnetron
 sputtering method. The mean diameters of the ***particles*** under
 as-deposited and 600.degree.C annealed conditions were evaluated as 5 nm
 and 15 nm, respectively. The light absorption peak of the ***silver***
 nanoparticles was adjusted to a laser wavelength of 405 nm for an
 optical ***disc*** system. The ***silver*** nanoparticles
 showed a higher absorption characteristic when they were annealed at
 above 500.degree.C. In the case of a recording mark size of 50 nm, the
 CNR enhancement of the super- ***RENS*** with the ***silver***
 nanoparticles was evaluated as 11 dB. This method using the
 silver nanoparticles provided a higher CNR increment in recording
 marks below the optical resolution limit
 CC A4280T Optical storage and retrieval; A8116 Methods of nanofabrication
 and processing; A8115C Deposition by sputtering; A8140G Other heat and
 thermomechanical treatments; B4120 Optical storage and retrieval
 CT annealing; light absorption; nanoparticles; ***optical***
 disc storage; ***silver*** ; sputter deposition
 ST super resolution enhanced near-field structure disc; silver
 nanoparticles; carrier-to-noise ratio; RF magnetron sputtering method;
 annealing; light absorption; optical disc system; recording mark size;
 optical resolution; 600 C; 405 nm; Ag
 CHI Ag el
 PHP temperature 8.73E+02 K; wavelength 4.05E-07 m
 ET C; B
 L3 ANSWER 42 OF 61 INSPEC (C) 2006 IEE on STN
 AN 2005:8448103 INSPEC DN A2005-14-4280F-012; B2005-07-4130-083
 TI ***Near*** ***field*** observation of a refractive index grating
 and a topographical grating by an optically-trapped ***gold***
 particle
 AU Ukita, H.; Uemi, H.; Hirata, A. (Fac. of Sci. & Eng., Ritsumeikan Univ.,
 Shiga, Japan)
 SO Optical Review (Nov.-Dec. 2004), vol.11, no.6, p. 365-9, 14 refs.
 CODEN: OPREFN, ISSN: 1340-6000
 SICI: 1340-6000(200411/12)11:6L:365:NFOR;1-K
 Published by: Opt. Soc. Japan, Japan
 DT Journal
 TC Experimental
 CY Japan
 LA English
 AB We observed the ***near*** ***field*** for a refractive index
 grating fabricated on a planar light waveguide circuit (PLC) by scanning
 an optically-trapped 100 nm diameter ***gold*** ***particle*** .
 We demonstrate that stable trapping and scanning occur with a Gaussian
 laser beam at the scan velocity of 1.6 .mu.m/s and Nd:YAG laser power of
 25 mW. The scattered Ar+ laser light from the ***gold***
 particle is strong at high refractive indexes of the grating with
 periods of 1.06 .mu.m and 0.53 .mu.m, both by s and p polarized
 illumination. In addition, we observed the surface profile of the
 optical ***disk*** tracking groove with and without the
 gold ***particle***
 CC A4280F Gratings, echelles; A4250V Mechanical effects of light; A7820D
 Optical constants and parameters (condensed matter); A6820 Solid surface
 structure; A0760P Optical microscopy; A4285D Optical fabrication, surface
 grinding; A4280L Optical waveguides and couplers; A4282 Integrated
 optics; B4130 Optical waveguides; B4140 Integrated optics
 CT diffraction gratings; ***gold*** ; laser beams; light polarisation;
 nanoparticles; ***near*** - ***field*** scanning optical
 microscopy; optical fabrication; optical planar waveguides; radiation
 pressure; refractive index; surface topography
 ST refractive index grating; topographical grating; optically-trapped gold
 particle; planar light waveguide circuit; Gaussian laser beam; polarized
 illumination; surface profile; optical disk tracking groove; 100 nm; 25
 mW; Au; YAG:Nd; Ar+; YAl5O12:Nd
 CHI Au el; YAl5O12:Nd ss, YAl5O12 ss, Al5O12 ss, Al5 ss, O12 ss, Al ss, Nd
 ss, O ss, Y ss, Nd el, Nd dop; Ar el

PHP size 1.0E-07 m; power 2.5E-02 W
 ET O; Nd; Al*O*Y; Al sy 3; sy 3; O sy 3; Y sy 3; YAl5O; Y cp; cp; Al cp; O
 cp; Al*O; Al5O; Al; Y; Ar; Ar+; Ar ip 1; ip 1

L3 ANSWER 43 OF 61 INSPEC (C) 2006 IEE on STN
 AN 2005:8384885 INSPEC DN A2005-12-4280T-002; B2005-06-4120-013
 TI Read/write mechanism for a scattered type ***super*** -
 resolution ***near*** - ***field*** structure using an AgOx
 mask layer and the smallest mark reproduced
 AU Ukita, H.; Ueda, Y.; Sasaki, M. (Fac. of Sci. & Eng., Ritsumeikan Univ.,
 Japan)
 SO Japanese Journal of Applied Physics, Part 2 (Letters) (Jan. 2005),
 vol.44, no.1A, p. 197-201, 12 refs.
 CODEN: JAPL88, ISSN: 0021-4922
 SICI: 0021-4922(200501)44:1A:197:RWMS;1-W
 Published by: Japan Soc. Appl. Phys, Japan
 DT Journal
 TC Experimental
 CY Japan
 LA English
 AB A working mechanism for a scattered type ***super*** -
 resolution ***near*** - ***field*** structure (
 super - ***RENS***) disk using a ***silver*** oxide (AgOx)
 mask layer has been studied experimentally. The AgOx ***mask***
 layer has five possible states depending on the laser power: AgOx
 (as-depo), uniformly dispersed ***Ag*** ***particles*** (after
 the initialization of 3.5 mW), ***Ag*** cluster (4-5 mW), ***Ag***
 diffusion (5.5-7.5 mW), and a ***Ag*** ring structure (greater than 8
 mW) for an objective lens numerical aperture of 0.5, a laser wavelength
 of 826 nm and a medium velocity of 2 m/s. On the other hand, the GeSbTe
 recording layer has the following possible states: crystal, half-way
 amorphous, completely amorphous, and gas bubble associated with
 Ag ***particles***. For ***super*** - ***resolution***
 read power (4 mW), the ***mask*** layer has a ***Ag*** ring
 structure that increases both the signal carrier to noise ratio and the
 resolution limit. We improve the resolution limit of 413 nm to 50 nm at
 the duty ratio of 10% for the write optical pulse
 CC A4280T Optical storage and retrieval; A4280A Optical lenses and mirrors;
 B4120 Optical storage and retrieval
 CT antimony compounds; diffusion; germanium compounds; lenses; ***masks***
 ; ***optical*** ***disc*** storage; ***silver*** compounds;
 zinc compounds
 ST read-write mechanism; scattered type super resolution near field
 structure; AgOx mask layer; super resolution near field structure disk;
 silver oxide mask layer; laser power; Ag particles; Ag cluster; Ag
 diffusion; Ag ring structure; objective lens numerical aperture; laser
 wavelength; GeSbTe recording layer; signal carrier to noise ratio; SNR;
 resolution limit; write optical pulse; 3.5 mW; 4 to 5 mW; 5.5 to 7.5 mW;
 826 nm; 413 to 50 nm; 2 m/s; ZnSiO2-AgOx-GeSbTe
 CHI ZnSiO2-AgO-GeSbTe int, GeSbTe int, ZnSiO2 int, SiO2 int, AgO int, Ag int,
 Ge int, O2 int, Sb int, Si int, Te int, Zn int, O int, GeSbTe ss, ZnSiO2
 ss, SiO2 ss, Ge ss, O2 ss, Sb ss, Si ss, Te ss, Zn ss, O ss, AgO bin, Ag
 bin, O bin
 PHP power 3.5E-03 W; power 4.0E-03 to 5.0E-03 W; power 5.5E-03 to 7.5E-03 W;
 wavelength 8.26E-07 m; wavelength 5.0E-08 to 4.13E-07 m; velocity 2.0E+00
 m/s
 ET Sb*Te; Sb sy 2; sy 2; Te sy 2; SbTe; Sb cp; cp; Te cp; Ag*Ge*O*Sb*Si*Te;
 Ag sy 6; sy 6; Ge sy 6; O sy 6; Sb sy 6; Si sy 6; Te sy 6; SiO2; Si cp; O
 cp; AgOx; Ag cp; GeSbTe; Ge cp; SiO2-AgOx-GeSbTe; O*Si; SiO;
 Ag*Ge*O*Sb*Te; Ag sy 5; sy 5; Ge sy 5; O sy 5; Sb sy 5; Te sy 5; AgO;
 AgO-GeSbTe; Ge*Sb*Te; Ge sy 3; sy 3; Sb sy 3; Te sy 3; O*Si*Zn; O sy 3;
 Si sy 3; Zn sy 3; ZnSiO; Zn cp; Ag*O; Ag; Ge; O; Sb; Si; Te; Zn

L3 ANSWER 44 OF 61 INSPEC (C) 2006 IEE on STN
 AN 2005:8363169 INSPEC DN A2005-11-6470K-005; B2005-05-4120-020
 TI Structural phase transition of AgOx sandwiched between ZnS-SiO2
 protective layers under thermal and laser pulse annealing for
 super - ***resolution*** ***near*** - ***field***
 recording
 AU Yung-Chiun Her; Yuh-Chang Lan; (Dept. of Mater. Eng., Nat. Chung-Hsing
 Univ., Taichung, Taiwan), Wei-Chih Hsu; Song-Yeu Tsai
 SO Japanese Journal of Applied Physics, Part 1 (Regular Papers, Short Notes

& Review Papers) (Nov. 2004), vol.43, no.11A, p. 7519-23, 13 refs.

CODEN: JAPNDE, ISSN: 0021-4922

SICI: 0021-4922(200411)43:11AL.7519:SPTA;1-3

Published by: Japan Soc. Appl. Phys, Japan

DT Journal

TC Experimental

CY Japan

LA English

AB The as-deposited AgOx prepared at an oxygen flow ratio of 0.5 consisted of Ag₂O and AgO phases. During thermal annealing, the reduction of AgO into Ag₂O, decomposition of Ag₂O into ***Ag*** and O₂, and out diffusion and aggregation of decomposed ***Ag*** would take place successively. The chemical decomposition of AgOx film sandwiched between two ZnS-SiO₂ protective layers was confirmed to be an irreversible process. As being irradiated by a high power laser pulse similar to the recording process, a hollow ***Ag*** cylinder, or ring, serving as an aperture, was formed in the AgOx ***mask*** layer, and small ***Ag*** ***particles***, serving as light-scattering centers, were precipitated in the center region. During the readout process, the small aperture can significantly reduce the readout laser spot size, while the strong ***near*** - ***field*** interaction between precipitated ***Ag*** ***particles*** and sub-wavelength marks can effectively enhance the readout signal. That elucidates the recording and readout mechanisms of ***super*** - ***resolution*** ***near*** - ***field*** structure disk with an AgOx ***mask*** layer

CC A6470K Solid-solid transitions; A4280T Optical storage and retrieval; A6865 Low-dimensional structures: growth, structure and nonelectronic properties; A8140G Other heat and thermomechanical treatments; A8230L Decomposition reactions (pyrolysis, dissociation, and group ejection); A6475 Solubility, segregation, and mixing; A4280X Optical coatings; A6180B Ultraviolet, visible and infrared radiation effects; B4120 Optical storage and retrieval; B4190F Optical coatings and filters

CT aggregation; diffusion; dissociation; laser beam annealing; nonlinear optics; ***optical*** ***disc*** storage; optical multilayers; precipitation; reduction (chemical); sandwich structures; silicon compounds; ***silver*** compounds; solid-state phase transformations; thin films; zinc compounds

ST structural phase transition; AgOx film sandwich; ZnS-SiO₂ protective layers; thermal annealing; laser pulse annealing; super resolution near field recording; Ag₂O phase; AgO reduction; diffusion; aggregation; chemical decomposition; irreversible process; high power laser pulse irradiation; hollow Ag cylinder; AgOx mask layer; Ag particles precipitation; light scattering centers; readout process; readout laser spot size; strong near field interaction; super resolution near field structure disk; ZnS-SiO₂-AgOx-ZnS-SiO₂

CHI ZnS-SiO₂-AgO-ZnS-SiO₂ int, SiO₂ int, AgO int, ZnS int, Ag int, O₂ int, Si int, Zn int, O int, S int, SiO₂ bin, AgO bin, ZnS bin, Ag bin, O₂ bin, Si bin, Zn bin, O bin, S bin

ET O*Si; SiO₂; Si cp; cp; O cp; O; Ag; Ag*O*S*Si*Zn; Ag sy 5; sy 5; O sy 5; S sy 5; Si sy 5; Zn sy 5; AgOx; Ag cp; ZnS; Zn cp; S cp; SiO₂-AgOx-ZnS-SiO₂; SiO; AgO; AgO-ZnS-SiO; Ag*O; S*Zn; Si; Zn; S; O*S*Si*Zn; O sy 4; sy 4; S sy 4; Si sy 4; Zn sy 4; ZnS-SiO₂; Ag₂O; O₂

L3 ANSWER 45 OF 61 INSPEC (C) 2006 IEE on STN

AN 2005:8281552 INSPEC DN A2005-06-4280F-006

TI ***Near*** ***field*** observation of a refractive index grating and a topographical grating by an optically-trapped ***gold*** ***particle***

AU Ukita, H.; Uemi, H. (Fac. of Sci. & Eng., Ritsumeikan Univ., Shiga, Japan)

SO Conference on Lasers and Electro-Optics (CLEO), vol.1, 2004, p. 3 pp. vol.1 of 2 vol. (3500) pp., 4 refs.

Editor(s): Sawchuk, A.A.

Published by: IEEE, Piscataway, NJ, USA

Conference: Conference on Lasers and Electro-Optics (CLEO), San Francisco, CA, USA, 16-21 May 2004

Sponsor(s): APS; IEEE; Opt. Soc. of America

DT Conference; Conference Article

TC Experimental

CY United States

LA English

AB A refractive index grating fabricated on a planar light waveguide circuit

(PLC) and an ***optical*** ***disk*** tracking groove profile are observed by scanning an optically-trapped 100-nm diameter ***gold***
 particle

CC A4280F Gratings, echelles; A7820D Optical constants and parameters (condensed matter); A4270Y Other optical materials; A4285D Optical fabrication, surface grinding; A4280L Optical waveguides and couplers; A7320M Collective excitations (surface states)

CT diffraction gratings; ***gold***; nanoparticles; optical fabrication; optical materials; optical planar waveguides; radiation pressure; refractive index; surface plasmons

ST near field observation; refractive index grating; topographical grating; optically-trapped gold particle; planar light waveguide circuit; optical disk tracking groove profile; 100 nm; Au

CHI Au el

PHP size 1.0E-07 m

L3 ANSWER 46 OF 61 INSPEC (C) 2006 IEE on STN

AN 2005:8235137 INSPEC DN A2005-04-4280T-038; B2005-02-4120-050

TI Signal characteristics of ***super*** - ***resolution***
 near - ***field*** structure ***disk*** in blue
 laser system

AU Jooho Kim; Inoh Hwang; Hyunki Kim; Duseop Yoon; Insik Park; Dongho Shin; (Digital Media R&D Center, Samsung Electron. Co. Ltd., Suwon, South Korea), Yunchang Park; Tominaga, J.

SO Japanese Journal of Applied Physics, Part 1 (Regular Papers, Short Notes & Review Papers) (July 2004), vol.43, no.7B, p. 4921-4, 16 refs.
 CODEN: JAPNDE, ISSN: 0021-4922
 SICI: 0021-4922(200407)43:7BL:4921:SCSR;1-#
 Published by: Japan Soc. Appl. Phys, Japan

DT Journal

TC Practical; Experimental

CY Japan

LA English

AB We report the signal characteristics of a ***super*** -
 resolution ***near*** - ***field*** structure (
 super - ***RENS***) ***disk*** in a blue ***laser***
 system (laser wavelength, 405 nm; numerical aperture (NA), 0.85). By introducing a new structure for the blue laser system, a 42.5 dB carrier to noise ratio (CNR) at a 50-nm-mark-length-signal (which is equivalent to a 75 GB capacity with a 0.32 micrometer track pitch and a 1-7 modulation code (Blu-ray disc (BD) format)) and a much higher readout-stability were obtained. Transmission electron microscope (TEM) image analysis revealed that the new blue structure has clear diffusion protection barriers produced by continuous ***Pt*** ***particles***, which is related to higher CNR and readout stability characteristics

CC A4280T Optical storage and retrieval; A4255R Lasing action in other solids; B4120 Optical storage and retrieval; B4320G Solid lasers

CT diffusion barriers; ***optical*** ***disc*** storage;
 platinum compounds; silicon compounds; solid lasers; transmission electron microscopy; zinc compounds

ST signal properties; super resolution near field structure disk; blue laser system; micrometer track pitch; modulation code; transmission electron microscopy; TEM; clear diffusion protection barriers; Blu-ray disc format; laser wavelength; numerical aperture; carrier-noise ratio; NA; CNR; 50 nm; 0.32 micron; 405 nm; 75 GB; 42.5 dB; ZnS-SiO2-PtO

CHI ZnS-SiO2-PtO int, SiO2 int, PtO int, ZnS int, O2 int, Pt int, Si int, Zn int, O int, S int, SiO2 bin, PtO bin, ZnS bin, O2 bin, Pt bin, Si bin, Zn bin, O bin, S bin

PHP size 5.0E-08 m; size 3.2E-07 m; wavelength 4.05E-07 m; memory size 8.1E+10 Byte; noise figure 4.25E+01 dB

ET O*Pt*Si; O sy 3; sy 3; Pt sy 3; Si sy 3; SiO2; Si cp; cp; O cp; PtO; Pt cp; SiO2-PtO; O*Si; SiO; O*Pt; S*Zn; ZnS; Zn cp; S cp; O; Pt; Si; Zn; S; B

L3 ANSWER 47 OF 61 INSPEC (C) 2006 IEE on STN

AN 2004:8042046 INSPEC DN A2004-18-4280T-002; B2004-09-4120-013

TI Effect of constituent phases of reactively sputtered AgOx film on recording and readout mechanisms of ***super*** - ***resolution***
 near - ***field*** structure disk

AU Yung-Chiun Her; Yuh-Chang Lan; (Dept. of Mater. Eng., Nat. Chung Hsing Univ., Taichung, Taiwan), Wei-Chih Hsu; Song-Yeu Tsai

SO Journal of Applied Physics (1 Aug. 2004), vol.96, no.3, p. 1283-8, 9

refs.
 CODEN: JAPIAU, ISSN: 0021-8979
 * SICI: 0021-8979(20040801)96:3L:1283:ECPR;1-I
 Price: 0021-8979/2004/96(3)/1283(6)/\$20.00
 Doc.No.: S0021-8979(04)11415-1
 Published by: AIP, USA

DT Journal
 TC Experimental
 CY United States
 LA English
 AB We have studied the dependence of the constituent phases of reactively sputtered AgOx ***mask*** layer on the recording and readout mechanisms of ***super*** - ***resolution*** ***near*** - ***field*** disk. At low oxygen flow ratios, the AgOx ***mask*** layer was found to be composed of an appreciable amount of ***Ag*** ***particles*** with sizes of tens of nanometers and Ag₂O phase. After recording by a high power laser pulse, a hollow ***Ag*** cylinder that had its center filled with O₂ was formed in the AgOx ***mask*** layer. The hollow ***Ag*** cylinder would serve as an aperture and could effectively reduce the laser spot size during readout, leading to the ***super*** - ***resolution*** effect only. At high oxygen flow ratios, the AgOx ***mask*** layer was found to be mostly composed of Ag₂O and/or AgO phases. After recording by a high power laser pulse, a hollow ***Ag*** cylinder that had its center filled with nanosized ***Ag*** ***particles*** was formed in the AgOx ***mask*** layer. The nanosized ***Ag*** precipitates would serve as light-scattering centers and could yield strong ***near*** - ***field*** interaction with the subwavelength marks, resulting in both the ***super*** - ***resolution*** and ***near*** - ***field*** effects during readout

CC A4280T Optical storage and retrieval; A6855 Thin film growth, structure, and epitaxy; A8115C Deposition by sputtering; A4280X Optical coatings; B4120 Optical storage and retrieval; B0520B Sputter deposition; B4190F Optical coatings and filters

CT multilayers; nanoparticles; ***optical*** ***disc*** storage; optical films; ***particle*** size; silicon compounds; ***silver*** compounds; sputter deposition; thin films; zinc compounds

ST sputtered AgOx film; super resolution near field structure disk; oxygen flow; particle size; laser pulse; AgOx mask layer; light scattering centers; strong near field interaction; nanosized Ag particles; laser spot size; precipitation; ZnS-SiO₂-AgOx-ZnS-SiO₂

CHI ZnS-SiO₂-AgO-ZnS-SiO₂ int, SiO₂ int, AgO int, ZnS int, Ag int, O₂ int, Si int, Zn int, O int, S int, SiO₂ bin, AgO bin, ZnS bin, Ag bin, O₂ bin, Si bin, Zn bin, O bin, S bin

ET Ag*O; AgOx; Ag cp; cp; O cp; Ag; Ag*O*S*Si*Zn; Ag sy 5; sy 5; O sy 5; S sy 5; Si sy 5; Zn sy 5; SiO₂; Si cp; ZnS; Zn cp; S cp; SiO₂-AgOx-ZnS-SiO₂; O*Si; SiO; AgO; AgO-ZnS-SiO; S*Zn; O; Si; Zn; S; Ag₂O; O₂

L3 ANSWER 48 OF 61 INSPEC (C) 2006 IEE on STN
 AN 2004:8026002 INSPEC DN A2004-17-4280T-002; B2004-08-4120-014
 TI Super-resolutional readout disk with metal-free phthalocyanine recording layer

AU Shima, T.; Kuwahara, M.; Fukaya, T.; Nakano, T.; Tominaga, J. (Center for Appl. Near-Field Opt. Res., Nat. Inst. of Adv. Ind. Sci. & Technol., Tsukuba, Japan)

SO Japanese Journal of Applied Physics, Part 2 (Letters) (15 Jan. 2004), vol.43, no.1A/B, p. L88-90, 7 refs.
 CODEN: JAPLD8, ISSN: 0021-4922
 SICI: 0021-4922(20040115)43:1A/BL:188:SRRD;1-Y
 Published by: Japan Soc. Appl. Phys, Japan

DT Journal
 TC Practical; Theoretical
 CY Japan
 LA English
 AB An ***optical*** ***disk*** with metal-free phthalocyanine (C₃₂H₁₈N₈, H₂PC) and Ag_{6.0}In_{4.4}Sb_{61.0}Te_{28.6} layers were prepared. It was possible to readout 200-nm mark with carrier-to-noise ratio of 41 dB that is beyond the resolution limit size. The cross-sectional image confirmed that H₂PC is a recording layer forming deformation. Metal ***particles*** were found not to be necessary for the super-resolutional readout, and the results should be helpful for

understanding the readout mechanism of the ***super*** -
 resolution ***near*** - ***field*** structure (
 super - ***RENS***) disk. An advantage of using H2PC recording
 layer was that it is resistant to temperature increase (400.degree.C)
 induced by the laser irradiation for the super-resolutional readout
 CC A4280T Optical storage and retrieval; B4120 Optical storage and retrieval
 CT indium compounds; ***optical*** ***disc*** storage; organic
 compounds; semiconductor materials; ***silver*** compounds
 ST metal free phthalocyanic recording layer; optical disk; AgInSbTe layers;
 carrier-noise ratio; super resolutional readout disk; readout mechanism;
 super resolution near field structure disk; laser irradiation; 400 degC;
 200 nm; AgInSbTe
 CHI AgInSbTe int, Ag int, In int, Sb int, Te int, AgInSbTe ss, Ag ss, In ss,
 Sb ss, Te ss
 PHP temperature 6.73E+02 K; size 2.0E-07 m
 ET In*Sb*Te; In sy 3; sy 3; Sb sy 3; Te sy 3; InSbTe; In cp; cp; Sb cp; Te
 cp; Ag; In; Sb; Te; Ag*In*Sb*Te; Ag sy 4; sy 4; In sy 4; Sb sy 4; Te sy
 4; AgInSbTe; Ag cp; C*H*N; C32H18N8; C cp; H cp; N cp; C*H*P; H2PC; P cp;
 Ag6.0In4.4Sb61.0Te28.6; B; C

L3 ANSWER 49 OF 61 INSPEC (C) 2006 IEE on STN
 AN 2004:7930430 INSPEC DN A2004-11-4280T-003; B2004-05-4120-017
 TI Thermal simulation for a two-dimensional ***near*** - ***field***
 optical recording system using a vertical-cavity surface-emitting laser
 AU Kurihara, K.; Nanri, K.; (Dept. of Phys., Tokai Univ., Kanagawa, Japan),
 Goto, K.
 SO Applied Physics Letters (26 April 2004), vol.84, no.17, p. 3415-17, 17
 refs.
 CODEN: APPLAB, ISSN: 0003-6951
 SICI: 0003-6951(20040426)84:17L:3415:TSDN;1-A
 Price: 0003-6951/2004/84(17)/3415(3)/\$22.00
 Doc.No.: S0003-6951(04)01514-1
 Published by: AIP, USA
 DT Journal
 TC Practical; Theoretical
 CY United States
 LA English
 AB An optical recording method with high throughput is required to create a
 two-dimensional ***near*** - ***field*** optical memory system
 using a vertical-cavity surface-emitting laser (VCSEL). Optical recording
 is possible with the combination of a ***near*** - ***field***
 probe and patterned medium. A patterned medium consisting of 40 nm
 periodic dots with phase change medium and ***silver*** nanoparticles
 were used for plasmon resonance induced by an electromagnetic wave. The
 electric field power density at the ***silver*** nanoparticles was
 increased about 87 000 times over that with a structure without patterned
 medium. Heat from this structure is effectively used by thermal
 conduction out of a ***silver*** nanoparticle and by concentrating
 the heat on a ***particle***. When the 1 mW optical intensity from a
 VCSEL is used, ***near*** - ***field*** optical recording is
 achieved. The recorded feature size was estimated at 40 nm. In this
 letter, a recording method is described using plasmon resonance and
 thermal conduction effects
 CC A4280T Optical storage and retrieval; A7320M Collective excitations
 (surface states); B4120 Optical storage and retrieval
 CT heat conduction; nanoparticles; optical storage; ***silver*** ;
 surface emitting lasers; surface plasmon resonance; thermal conductivity
 ST thermal simulation; two-dimensional near field optical recording system;
 vertical cavity surface emitting laser; VCSEL; phase change medium;
 silver nanoparticles; plasmon resonance; electromagnetic wave; electric
 field power density; thermal conduction; heat; optical intensity; Ag
 CHI Ag el

L3 ANSWER 50 OF 61 INSPEC (C) 2006 IEE on STN
 AN 2004:7923513 INSPEC DN A2004-10-4262A-011; B2004-05-4360B-014
 TI Underwater and water-assisted laser processing: part 2-etching, cutting
 and rarely used methods
 AU Kruusing, A. (Dept. of Mechatronics, Tallinn Tech. Univ., Estonia)
 SO Optics and Lasers in Engineering (Feb. 2004), vol.41, no.2, p. 329-52,
 124 refs.
 CODEN: OLENDN, ISSN: 0143-8166
 SICI: 0143-8166(200402)41:2L:329:UWAL;1-B

Price: 0143-8166/04/\$30.00

Published by: Elsevier, UK

DT Journal

TC General Review

CY United Kingdom

LA English

AB In the second part of the article, the subtractive process-laser etching and cutting-in the presence of liquid water will be reviewed; but the rarely used methods of water assisted/underwater laser processing, such as welding, silicon wafer breaking, surface modification of polymers, pulsed laser deposition, ***particle*** formation and water ***mask*** defined microstructures fabrication, will also be described. Etching and cutting under water provide better tolerances and smaller heat-affected zone widths and avoid the re-deposition of debris. Irradiation under water results in increased wetting of fluoropolymers, and laser ablation in water vapor provides deposition of highly crystalline hydroxyapatite coatings. Laser irradiation of solid targets in water has been used to fabricate ***Ag***, ***Au***, Ni ***Cu*** and carbon nanoparticles. The results of an original study on the formation of free-standing high-aspect ratio $\text{Pb}(\text{Zr}_{x}\text{Ti}_{1-x})\text{O}_3$ microplates fabricated by laser irradiation of $\text{Pb}(\text{Zr}_{x}\text{Ti}_{1-x})\text{O}_3$ ceramics in water are also reported. The platelets were up to 60 μm in diameter and 50 to 160 nm in thickness. The use of neutral liquids other than water and some medical applications of underwater/water-assisted laser light driven process will also be briefly reviewed

CC A4262A Laser materials processing; A4260H Laser beam characteristics and interactions; A4285D Optical fabrication, surface grinding; A8115I Pulsed laser deposition; A8760F Optical and laser radiation (medical uses); A0130R Reviews and tutorial papers; resource letters; B4360B Laser materials processing; B4330 Laser beam interactions and properties; B0520H Pulsed laser deposition

CT carbon; ceramics; ***copper***; elemental semiconductors; ***gold***; ***laser*** applications in ***medicine***; laser beam cutting; laser beam effects; laser beam etching; laser beam welding; lead compounds; nanoparticles; nickel; optical fabrication; polymers; pulsed laser deposition; reviews; silicon; ***silver***; surface treatment; water

ST underwater laser processing; water-assisted laser processing; laser etching; laser cutting; subtractive process; liquid water; welding; silicon wafer breaking; surface modification; polymers; pulsed laser deposition; particle formation; water mask; microstructures fabrication; debris redeposition; wetting; fluoropolymers; laser ablation; water vapor; highly crystalline hydroxyapatite coatings; laser irradiation; solid targets; Ag nanoparticles; Au nanoparticles; Ni nanoparticles; Cu nanoparticles; carbon nanoparticles; free-standing high-aspect ratio; $\text{Pb}(\text{Zr}_{x}\text{Ti}_{1-x})\text{O}_3$ microplates; $(\text{Ti}_{1-x})\text{O}_3$ ceramics; platelets; neutral liquids; medical applications; 50 to 160 nm; Ag; Au; Ni; Cu; C; $\text{Pb}(\text{Zr}_{x}\text{Ti}_{1-x})\text{O}_3$

CHI Ag el; Au el; Ni el; Cu el; C el; PbZrTiO_3 ss, TiO_3 ss, O_3 ss, Pb ss, Ti ss, Zr ss, O ss

PHP size 5.0E-08 to 1.6E-07 m

ET $\text{O}^*\text{Ti}^*\text{Zr}$; $\text{O sy } 3$; $\text{sy } 3$; $\text{Ti sy } 3$; $\text{Zr sy } 3$; $(\text{Zr}_{x}\text{Ti}_{1-x})\text{O}_3$; Zr cp; cp; Ti cp; O cp; ZrTiO ; O^*Ti ; TiO ; O; Pb; Ti; Zr; Ag; Au; Ni; Cu; $\text{O}^*\text{Pb}^*\text{Ti}^*\text{Zr}$; $\text{O sy } 4$; $\text{sy } 4$; $\text{Pb sy } 4$; $\text{Ti sy } 4$; $\text{Zr sy } 4$; $\text{Pb}(\text{Zr}_{x}\text{Ti}_{1-x})\text{O}_3$; Pb cp

L3 ANSWER 51 OF 61 INSPEC (C) 2006 IEE on STN

AN 2003:7812808 INSPEC DN A2004-03-4280T-060; B2004-02-4120-059; C2004-02-5320K-032

TI Simulation of ***super*** ***resolution*** ***near*** - ***field*** structure (***Super*** - ***RENS***) using finite differential time domain (FDTD) method

AU Lu Yonghua; Ming Hai; Jiao Xiaojin; Wang Pei (Dept. of Phys., Univ. of Sci. & Technol. of China, Hefei, China)

SO Proceedings of the SPIE - The International Society for Optical Engineering (2002), vol.4930, p. 503-7, 7 refs.

CODEN: PSISDG, ISSN: 0277-786X

SICI: 0277-786X(2002)4930L:503:SSRN;1-1

Price: 0277-786X/02/\$15.00

Published by: SPIE-Int. Soc. Opt. Eng, USA

Conference: Advanced Optical Storage Technology, Shanghai, China, 15-18 Oct. 2002

Sponsor(s): SPIE

DT Conference; Conference Article; Journal
TC Application
CY United States
LA English
AB In this paper, modified finite differential time domain (FDTD) method is used to investigate ***super*** ***resolution*** ***near*** - ***field*** structure (***Super*** - ***RENS***). The random distributed ***Ag*** ***particles***, which is responsible for the localization and the enhancement of the surface plasmon within the Super- ***RENS***, is included in this simulation. The ***near*** - ***field*** optical distribution when recording mark is just beneath the nonlinear aperture is achieved. And the transmitted readout signal is also simulated

CC A4280T Optical storage and retrieval; A7320M Collective excitations (surface states); B4120 Optical storage and retrieval; B0290Z Other numerical methods; C5320K Optical storage; C4190 Other numerical methods
CT finite difference time-domain analysis; ***optical*** ***disc*** storage; ***silver***; surface plasmons
ST super resolution near-field structure; finite differential time domain method; FDTD; random distributed Ag particles; localization; enhancement; surface plasmon; recording mark; nonlinear aperture; transmitted readout signal; Ag

CHI Ag el
ET Ag

L3 ANSWER 52 OF 61 INSPEC (C) 2006 IEE on STN
AN 2003:7743537 INSPEC DN A2003-22-4280T-001; B2003-11-4120-010
TI Recording and readout mechanisms of ***super*** - ***resolution*** ***near*** - ***field*** structure disk with a ***silver*** oxide ***mask*** layer

AU Yung-Chiun Her; Yuh-Chang Lan; (Dept. of Mater. Eng., Nat. Chung Hsing Univ., Taiwan, Taiwan), Wei-Chih Hsu; Song-Yeu Tsai
SO Applied Physics Letters (15 Sept. 2003), vol.83, no.11, p. 2136-8, 6 refs.
CODEN: APPLAB, ISSN: 0003-6951
SICI: 0003-6951(20030915)83:11L:2136:RRMS;1-1
Price: 01/03/6951/2003/83(11)/2136(3)/\$20.00
Doc.No.: S0003-6951(03)06036-4
Published by: AIP, USA

DT Journal
TC Application; Experimental
CY United States
LA English
AB The chemical decomposition of AgOx sandwiched between two ZnS-SiO2 protective layers was an irreversible process. We confirmed that a hollow ***Ag*** cylinder, or ring, serving as an aperture, was formed and small ***Ag*** ***particles*** were precipitated in the center region during the recording process. The small aperture can significantly reduce the laser spot size during the readout process and the strong ***near*** - ***field*** interaction between precipitated ***Ag*** ***particles*** and subwavelength marks can effectively enhance the readout signal. That clarifies both the ***super*** - ***resolution*** effect and the ***near*** - ***field*** interaction in the ***super*** - ***resolution*** ***near*** - ***field*** structure disk

CC A4280T Optical storage and retrieval; B4120 Optical storage and retrieval
CT annealing; ***masks***; ***optical*** ***disc*** storage; optical multilayers; ***silver*** compounds
ST readout mechanisms; recording mechanisms; super-resolution near-field structure disk; silver oxide mask layer; as-deposited AgOx; flow ratio; isothermal annealing; decomposed Ag; precipitated silver particles; protective layer; chemical decomposition; ZnS-SiO2 protective layers; irreversible process; hollow Ag cylinder; Ag ring; small aperture; laser spot size; strong near-field interaction; subwavelength marks; nonlinear optical layer; AgOx; Ag; Ag2O; ZnS-SiO2

CHI AgO int, Ag int, O int, AgO bin, Ag bin, O bin; Ag el; Ag2O bin, Ag2 bin, Ag bin, O bin; ZnS-SiO2 int, SiO2 int, ZnS int, O2 int, Si int, Zn int, O int, S int, SiO2 bin, ZnS bin, O2 bin, Si bin, Zn bin, O bin, S bin
ET Ag*O; AgOx; Ag cp; cp; O cp; O*Si; SiO2; Si cp; Ag; O; AgO; SiO; S*Zn; ZnS; Zn cp; S cp; Si; Zn; S; O*S*Si*Zn; O sy 4; sy 4; S sy 4; Si sy 4; Zn sy 4; ZnS-SiO2

L3 ANSWER 53 OF 61 INSPEC (C) 2006 IEE on STN
 AN 2003:7617128 INSPEC DN A2003-12-4280T-072; B2003-06-4120-076
 TI Recording and readout mechanisms of ***super*** - ***resolution***
 near - ***field*** structure disc with ***silver*** -oxide
 layer
 AU Kikukawa, T.; (Inf. Technol. Res. Center, TDK Corp., Nagano, Japan),
 Tachibana, A.; Fuji, H.; Tominaga, J.
 SO Japanese Journal of Applied Physics, Part 1 (Regular Papers, Short Notes
 & Review Papers) (Feb. 2003), vol.42, no.2B, p. 1038-9, 3 refs.
 CODEN: JAPNDE, ISSN: 0021-4922
 SICI: 0021-4922(200302)42:2BL.1038:RRMS;1-#
 Published by: Japan Soc. Appl. Phys, Japan
 Conference: 2002 International Symposium on Optical Memory and Optical
 Data Storage Topical Meeting. Joint International Symposium on Optical
 Memory and Optical Data Storage 2002. Technical Digest, Waikoloa, HI,
 USA, 7-11 July 2002
 Sponsor(s): IEEE/Lasers & Electro-Opt. Soc.; OSA - Opt. Soc. America;
 SPIE - Int. Soc. Opt. Eng.; JSAP - Japan Soc. Appl. Phys.; MSJ -
 Magnetics Soc. Japan; OITDA - Optoelectron. Ind. & Technol. Dev. Assoc.;
 IEICE; Chemical Soc. Japan; Inf. Process. Soc. Japan; Inst. Electr. Eng.
 Japan; Inst. Image Inf. & Telev. Eng.; Japan Soc. Precision Eng.; Laser
 Soc. Japan
 DT Conference; Conference Article; Journal
 TC Experimental
 CY Japan
 LA English
 AB We observed recorded and readout states of a ***super*** -
 resolution ***near*** - ***field*** structure disc with a
 AgO layer by the use of a transmission electron microscope. It was
 confirmed that recording is caused by the explosion of AgO and that the
 deformation of the layers due to the explosion becomes a recorded mark.
 The ***Ag*** ***particles*** which irreversibly precipitate after
 a high readout power irradiation are considered to be the origin of the
 super - ***resolution*** readout
 CC A4280T Optical storage and retrieval; A4230H Resolution of optical
 images; A4270Y Other optical materials; B4120 Optical storage and
 retrieval; B4110 Optical materials
 CT image resolution; ***optical*** ***disc*** storage; optical
 multilayers; precipitation; ***silver*** compounds; storage media;
 transmission electron microscopy
 ST super-resolution near-field structure disc; readout mechanisms; recording
 mechanisms; silver-oxide layer; recorded states; readout states; AgO
 layer; transmission electron microscope; AgO explosion; deformation;
 recorded mark; Ag particles; irreversible precipitation; high readout
 power irradiation; super-resolution readout; AgO; Ag
 CHI AgO bin, Ag bin, O bin; Ag el
 ET O; Ag; Ag*O; AgO; Ag cp; cp; O cp

 L3 ANSWER 54 OF 61 INSPEC (C) 2006 IEE on STN
 AN 2003:7613338 INSPEC DN A2003-12-8115C-025; B2003-06-0520B-024
 TI Investigations of sputtered ***silver*** oxide deposits for the
 super- ***RENS*** high density optical data storage application
 AU Buchel, D.; Mihalcea, C.; Fukaya, T.; Atoda, N.; Tominaga, J. (Lab. for
 Adv. Opt. Technol., Nat. Inst. of Adv. Ind. Sci. & Technol., Ibaraki,
 Japan)
 SO Applications of Ferromagnetic and Optical Materials, Storage and
 Magnetoelectronics (Materials Research Society Symposium Proceedings
 Vol.674), 2001, p. V3.2.1-6 of xvii+498 pp., 11 refs.
 Editor(s): Borg, H.J.; Bussmann, K.; Egelhoff, W.F.; Hesselink, L.;
 Majetich, S.A.; Murdock, E.S.; Stadler, B.J.H.; Vazquez, M.; Wuttig, M.;
 Xiao, J.Q.
 ISBN: 1 55899 610 9
 Published by: Mater. Res. Soc, Warrendale, PA, USA
 Conference: Applications of Ferromagnetic and Optical Materials, Storage
 and Magnetoelectronics Symposium, San Francisco, CA, USA, 16-20 April
 2001
 DT Conference; Conference Article
 TC Application; Experimental
 CY United States
 LA English
 AB Thin ***silver*** oxide films used as ***mask*** layers in
 super - ***Resolution*** Nearfield Structure (***super*** -

RENS) ***disks*** for high density ***optical*** data storage were reactively sputter-deposited and their composition was determined by spectroscopic means. We found that the stoichiometry of the films changed with the oxygen content in the sputtering gas atmosphere. With a stepwise increase in the percentage of O₂ from 0-100%, the corresponding layers consist of ***Ag***, mixtures of ***Ag*** and Ag₂O, Ag₂O, mixtures of Ag₂O and AgO and AgO. Laser activation of such oxidic phase containing deposits results in the decomposition of the material and excitation of strong local plasmons in the remaining ***silver*** clusters. This was confirmed by acquiring surface enhanced Raman spectra (SERS) of benzoic acid (BA), ***copper*** phthalocyanine (CP) and internal carbon impurities on ***silver*** oxide substrates. From this data, we conclude that the sub-wavelength ***resolution*** obtained in ***super*** - ***RENS*** disks is mediated by local surface plasmons on small ***silver*** ***particles*** forming in the ***mask*** layer

CC A8115C Deposition by sputtering; A7320M Collective excitations (surface states); A6820 Solid surface structure; A6480E Stoichiometry and homogeneity; A6475 Solubility, segregation, and mixing; A6855 Thin film growth, structure, and epitaxy; A4280X Optical coatings; A4280T Optical storage and retrieval; A7830G Infrared and Raman spectra in inorganic crystals; A7865P Optical properties of other inorganic semiconductors and insulators (thin films/low-dimensional structures); B0520B Sputter deposition; B4190F Optical coatings and filters; B4110 Optical materials; B4120 Optical storage and retrieval

CT decomposition; impurities; ***masks***; metal clusters; ***optical*** ***disc*** storage; optical films; ***silver*** compounds; sputter deposition; stoichiometry; surface composition; surface enhanced Raman scattering; surface plasmons

ST thin silver oxide films; mask layers; super resolution nearfield structure disks; high density optical data storage; reactive sputter deposition; composition; sputtering gas atmosphere; laser activation; oxidic phase; material decomposition; local plasmons excitation; silver clusters; surface enhanced Raman spectra; SERS; benzoic acid; copper phthalocyanine; carbon impurities; silver oxide substrates; subwavelength resolution; surface plasmons; silver particles; stoichiometry; AgO:C

CHI AgO:C sur, AgO sur, Ag sur, C sur, O sur, AgO:C ss, Ag ss, C ss, O ss, AgO bin, Ag bin, O bin, C el, C dop

ET C*O; O:C; C doping; doped materials; Ag*O; AgO; Ag cp; cp; O cp; Ag; C; O; C*Ag*O; AgO:C; O₂; Ag₂O

L3 ANSWER 55 OF 61 INSPEC (C) 2006 IEE on STN

AN 2003:7606672 INSPEC DN A2003-12-7320M-001

TI Optical transmittance study of ***silver*** ***particles*** formed by AgO_x thermal decomposition

AU Shima, T.; Tominaga, J. (Lab. for Adv. Opt. Technol. (Laotech), Nat. Inst. of Adv. Ind. Sci. & Technol. (AIST), Tsukuba, Japan)

SO Journal of Vacuum Science & Technology A (Vacuum, Surfaces, and Films) (May 2003), vol.21, no.3, p. 634-7, 16 refs.
 CODEN: JVTAD6, ISSN: 0734-2101
 SICI: 0734-2101(200305)21:3L:634:OTSS;1-X
 Published by: AIP for American Vacuum Soc, USA

DT Journal

TC Experimental

CY United States

LA English

AB ***Silver*** oxide (AgO_x) thin films were found to exhibit localized surface plasmon resonance absorption when they were heated above the decomposition temperature. The resonance absorption for annealed AgO was obvious with the film thickness of 5 nm, and it became weak at 15 nm. Atomic force microscope images of a 15 nm film have shown that various-size ***particles*** (diameter in lateral direction: 100-600 nm) are dispersed after annealing at 600.degree.C. Similar optical and morphological properties were obtained with the oxygen composition ratio in the range of 33-48 at. % (i.e., Ag₂O and AgO). AgO_x film with about 15 nm thickness is mostly used in super-resolutional ***near*** - ***field*** structure (super- ***RENS***) when combined with an ***optical*** ***disk*** for the readout of small marks beyond the diffraction limit. The results did not show, however, any evidence that the absorption properties and the readout process of super- ***RENS*** disk are well correlated

CC A7320M Collective excitations (surface states); A7865E Optical properties

of metals and metallic alloys (thin films/low-dimensional structures);
A7840K Visible and ultraviolet spectra of metals, semimetals, and alloys;
A6146 Structure of solid clusters, nanoparticles, and nanostructured
materials; A6170A Annealing processes; A8230L Decomposition reactions
(pyrolysis, dissociation, and group ejection)
CT annealing; atomic force microscopy; light transmission; nanoparticles;
pyrolysis; ***silver*** ; ***silver*** compounds; surface plasmon
resonance; visible spectra
ST optical transmittance; AgOx thermal decomposition; Ag particles;
localized surface plasmon resonance absorption; annealed AgO; atomic
force microscope images; annealing; various size particles; morphological
properties; super-resolution near-field structure; 15 nm; 5 nm; 100 to
600 nm; 600 C; AgOx; Ag
CHI AgO bin, Ag bin, O bin; Ag el
PHP size 1.5E-08 m; size 5.0E-09 m; size 1.0E-07 to 6.0E-07 m; temperature
8.73E+02 K
ET Ag*O; AgO; Ag cp; cp; O cp; O; Ag; AgOx; C; Ag2O

L3 ANSWER 56 OF 61 INSPEC (C) 2006 IEE on STN
AN 2003:7562673 INSPEC DN A2003-09-4280T-001; B2003-04-4120-024
TI Rigid bubble pit formation and huge signal enhancement in ***super***
- ***resolution*** ***near*** - ***field*** structure disk with
platinum -oxide layer
AU Kikukawa, T.; (Inf. Technol. Res. Center, TDK Corp., Nagano, Japan),
Nakano, T.; Shima, T.; Tominaga, J.
SO Applied Physics Letters (16 Dec. 2002), vol.81, no.25, p. 4697-9, 17
refs.
CODEN: APPLAB, ISSN: 0003-6951
SICI: 0003-6951(20021216)81:25L:4697:RBFH;1-W
Price: 01/03/6951/2002/81(25)/4697(3)/\$19.00
Doc.No.: S0003-6951(02)00150-X
Published by: AIP, USA
DT Journal
TC Practical; Theoretical
CY United States
LA English
AB Huge signal enhancement was observed by a ***super*** -
resolution ***near*** - ***field*** structure disk with a
platinum -oxide layer. The carrier-to-noise ratio of 200-nm-mark
trains reached 46.1 dB, and 42.3 dB was obtained even at 150-nm-mark
trains. The sizes of the marks were one-fifth to one-seventh of the laser
spot diameter of the readout system. The cross section of the mark trains
was also observed by transmission electron microscopy. It was confirmed
that 200-nm-size bubble pits were rigidly formed in good separation and
20-nm- ***platinum*** ***particles*** precipitated inside the
bubble. The computer-simulation based on the model supported the huge
signal enhancement

CC A4280T Optical storage and retrieval; A0260 Numerical approximation and
analysis; B4120 Optical storage and retrieval; B0290Z Other numerical
methods
CT finite difference time-domain analysis; ***optical*** ***disc***
storage; ***platinum*** compounds; pyrolysis; transmission electron
microscopy
ST rigid bubble pit formation; huge signal enhancement; superresolution
near-field structure disk; platinum-oxide layer; carrier-to-noise ratio;
mark trains; transmission electron microscopy; finite-differential
time-domain computer-simulation model; optical near-field recording; 20
nm; 200 nm; PtO2
CHI PtO2 int, O2 int, Pt int, O int, PtO2 bin, O2 bin, Pt bin, O bin
PHP size 2.0E-08 m; size 2.0E-07 m
ET O; Pt; O*Pt; PtO; Pt cp; cp; O cp; B

L3 ANSWER 57 OF 61 INSPEC (C) 2006 IEE on STN
AN 2003:7555262 INSPEC DN A2003-08-7570-005; B2003-04-3120B-033
TI Magnetic lithography using a flexible master: a method for instantaneous
magnetic recording on media surfaces with flatness imperfections
AU Bandic, Z.Z.; Xu, H.; Albrecht, T.R. (IBM Almaden Res. Center, San Jose,
CA, USA)
SO Applied Physics Letters (6 Jan. 2003), vol.82, no.1, p. 145-7, 14 refs.
CODEN: APPLAB, ISSN: 0003-6951
SICI: 0003-6951(20030106)82:1L:145:MLUF;1-Y
Price: 01/03/6951/2003/82(1)/145(3)/\$19.00

Published by: AIP, USA

DT Journal

TC Practical; Experimental

CY United States

LA English

AB A method for instantaneous parallel recording on magnetic media using a flexible master has been developed. Magnetic lithography (qualitatively analogous to optical lithography) transfers information from a patterned magnetic ***mask*** (analog of ***optical*** photomask) to magnetic ***media*** (analog of photoresist). The ***mask*** consists of patterned soft magnetic material (FeNiCo, FeCo) on a flexible polyethylene tetrathalate (PET) substrate. When uniformly magnetized media is brought into intimate contact with the magnetic ***mask***, an externally applied magnetic field selectively changes the magnetic orientation in the areas not covered with the soft magnetic material. Imperfect flatness or the presence of ***particular*** contaminants can result in local loss of intimate contact between the master and media, resulting in loss of resolution of submicron features in the transferred magnetic pattern. A flexible master, held against the media via an applied pressure, offers superior compliance to imperfections, even at relatively small applied pressures. We fabricated samples of submicron patterned FeCo and FeNiCo magnetic ***masks***, and successfully transferred patterns to hard disk CrPtCo-based magnetic media. The details of the method, including fabrication of the magnetic ***mask*** on flexible PET substrates, physics of the magnetic lithography pattern transfer, and magnetic force microscopy images of the magnetic transition patterns are reported

CC A7570A Magnetic properties of monolayers and overlayers; A7560E Magnetization curves, hysteresis, Barkhausen and related effects; A7550S Magnetic recording materials; A0779 Scanning probe microscopy and related techniques; B3120B Magnetic recording

CT chromium alloys; cobalt alloys; hard discs; iron alloys; lithography; magnetic force microscopy; magnetic recording; magnetic thin films; magnetisation; nickel alloys; ***platinum*** alloys

ST magnetic lithography; flexible master; magnetic recording; media surfaces; flatness imperfections; instantaneous parallel recording; magnetic media; patterned magnetic mask; patterned soft magnetic material; flexible polyethylene tetrathalate substrate; externally applied magnetic field; magnetic orientation; particular contaminants; loss of resolution; FeCo; FeNiCo; magnetic masks; hard disk CrPtCo-based magnetic media; pattern transfer; magnetic force microscopy; magnetic transition patterns

CHI FeNiCo sur, Co sur, Fe sur, Ni sur, FeNiCo ss, Co ss, Fe ss, Ni ss; FeCo sur, Co sur, Fe sur, FeCo bin, Co bin, Fe bin

ET Co*Ni; Co sy 2; sy 2; Ni sy 2; NiCo; Ni cp; cp; Co cp; Co*Cr*Pt; Co sy 3; sy 3; Cr sy 3; Pt sy 3; CrPtCo; Cr cp; Pt cp; Co; Fe; Ni; Co*Fe*Ni; Fe sy 3; Ni sy 3; FeNiCo; Fe cp; Co*Fe; Fe sy 2; FeCo

L3 ANSWER 58 OF 61 INSPEC (C) 2006 IEE on STN

AN 2003:7492460 INSPEC DN B2003-02-4120-162; C2003-02-5320K-106

TI Recording and readout mechanisms of ***super*** - ***resolution*** ***near*** - ***field*** structure disc with ***silver*** oxide layer

AU Kikukawa, T.; (Inf. Technol. Res. Center, TDK Corp., Nagano, Japan), Tachibana, A.; Fuji, H.; Tominaga, J.

SO 2002 International Symposium on Optical Memory and Optical Data Storage Topical Meeting. Joint International Symposium. Technical Digest. Postdeadline Papers (Cat.No.02EX552), 2002, p. 45-7 of (xiii+439+ii+70 suppl.) pp., 2 refs. ISBN: 0 7803 7379 0 Price: 0-7803-7379-0/02/\$17.00 Published by: IEEE, Piscataway, NJ, USA Conference: 2002 International Symposium on Optical Memory and Optical Data Storage Topical Meeting. Joint International Symposium on Optical Memory and Optical Data Storage 2002. Technical Digest, Waikoloa, HI, USA, 7-11 July 2002 Sponsor(s): IEEE/Lasers & Electro-Opt. Soc.; OSA - Opt. Soc. America; SPIE - Int. Soc. Opt. Eng.; JSAP - Japan Soc. Appl. Phys.; MSJ - Magnetics Soc. Japan; OITDA - Optoelectron. Ind. & Technol. Dev. Assoc.; IEICE; Chemical Soc. Japan; Inf. Process. Soc. Japan; Inst. Electr. Eng. Japan; Inst. Image Inf. & Telev. Eng.; Japan Soc. Precision Eng.; Laser Soc. Japan

DT Conference; Conference Article
TC Practical; Experimental
CY United States
LA English
AB Several technologies to increase the densities of ***optical***
discs have been proposed. Among them, the ***super*** -
resolution ***near*** - ***field*** structure (
Super - ***RENS***) technique (J. Tominaga et al., Appl. Phys.
Lett. vol. 73, p. 2078, 1998; H. Fuji et al., Jpn. J. Appl. Phys. vol.
39, p. 980, 2000) is attractive because it satisfies both
super-high-density recording/readout and removability at the same time.
In this study, we have directly observed recorded and readout states of
Super- ***RENS*** with AgOx layer by use of transmission electron
microscopy (TEM) for the first time. We also have found that the
recording and readout mechanisms are different from those which were
explained by the terms of crystallization recording and reversible
precipitation of ***Ag*** ***particles*** in an AgOx matrix
CC B4120 Optical storage and retrieval; B4110 Optical materials; B4190F
Optical coatings and filters; C5320K Optical storage
CT ***optical*** ***disc*** storage; optical films; ***silver***
compounds; transmission electron microscopy
ST recording mechanisms; readout mechanisms; super-resolution near-field
structure disc; silver oxide layer; optical disc density; Super-RENS
technique; super-high-density recording/readout; removability; recorded
states; readout states; transmission electron microscopy; TEM;
crystallization recording; reversible precipitation; Ag particles; AgOx
layer; AgO
CHI AgO int, Ag int, O int, AgO bin, Ag bin, O bin
ET O; Ag; Ag*O; AgO; Ag cp; cp; O cp; J; H; AgOx

L3 ANSWER 59 OF 61 INSPEC (C) 2006 IEE on STN
AN 2003:7492327 INSPEC DN A2003-03-4280T-055; B2003-02-4120-075
TI Functional structures of AgOx thin-film for ***near*** - ***field***
recording
AU Fu Han Ho; Hsun Hao Chang; Yu-Hsaun Lin; Din Ping Tsai; (Dept. of Phys.,
Nat. Taiwan Univ., Taipei, Taiwan), Bing-Mau Chen; Shyh-Yeu Wang
SO 2002 International Symposium on Optical Memory and Optical Data Storage
Topical Meeting. Joint International Symposium. Technical Digest
(Cat.No.02EX552), 2002, p. 183-5 of (xiii+439+ii+70 suppl.) pp., 8 refs.
ISBN: 0 7803 7379 0
Price: 0-7803-7379-0/02/\$17.00
Published by: IEEE, Piscataway, NJ, USA
Conference: 2002 International Symposium on Optical Memory and Optical
Data Storage Topical Meeting. Joint International Symposium on Optical
Memory and Optical Data Storage 2002. Technical Digest, Waikoloa, HI,
USA, 7-11 July 2002
Sponsor(s): IEEE/Lasers & Electro-Opt. Soc.; OSA - Opt. Soc. America;
SPIE - Int. Soc. Opt. Eng.; JSAP - Japan Soc. Appl. Phys.; MSJ -
Magnetics Soc. Japan; OITDA - Optoelectron. Ind. & Technol. Dev. Assoc.;
IEICE; Chemical Soc. Japan; Inf. Process. Soc. Japan; Inst. Electr. Eng.
Japan; Inst. Image Inf. & Telev. Eng.; Japan Soc. Precision Eng.; Laser
Soc. Japan
DT Conference; Conference Article
TC Experimental
CY United States
LA English
AB We found two kinds of states in an AgOx film controlled by different
laser input powers, and the optical properties of each state have
different functions for reading and writing of ***near*** -
field recording. The measurement of a static tester was used to
make the sample fix to a ***particular*** state, and the reversible
process should be considered as a dynamic process, i. e. rotating.
Another interesting application is to produce a matrix (2D periodic
structure) of dots or rings with the same size, and by controlling the
spacing, i.e., the scattering length, we can control the light absorption
spectrum as a filter. The optical properties of AgOx thin film could be
varied by proper input laser energy
CC A4280T Optical storage and retrieval; A7865P Optical properties of other
inorganic semiconductors and insulators (thin films/low-dimensional
structures); B4120 Optical storage and retrieval; B6430H Video recording
CT ***optical*** ***disc*** storage; optical properties;
reflectivity; ***silver*** compounds; thin films; video recording

ST AgOx thin-film; near-field recording; laser input power; optical properties; 2D periodic structure; light absorption spectrum control; DVD disk; AgO

CHI AgO int, Ag int, O int, AgO bin, Ag bin, O bin

ET D; O; Ag; Ag*O; AgO; Ag cp; cp; O cp; AgOx

L3 ANSWER 60 OF 61 INSPEC (C) 2006 IEE on STN

AN 2001:6960696 INSPEC DN A2001-15-8745-001

TI Application of laser diagnostic techniques to characterize the spray issued from a pMDI

AU Dunbar, C.A.; Watkins, A.P.; (Thermo-Fluids Div., Dept. of Mech. Eng., Manchester, UK), Miller, J.F.

SO International Journal of Fluid Mechanics Research (1997), vol.24, no.4-6, p. 568-77, 13 refs.
CODEN: FLMREB, ISSN: 1064-2277
SICI: 1064-2277(1997)24:4/6L:568:ALDT;1-S
Price: 1064-2277/97/\$5.00
Published by: Begell House, USA

DT Journal

TC Practical; Experimental

CY United States

LA English

AB The pressurized metered-dose inhaler (pNDI) is a compact pressurized spray dispenser designed for the oral inhalation of multiple doses of finely dispersed drug in the treatment of various pulmonary diseases, the most common being asthma. This research was concerned with the experimental investigation of the spray issued from a pMDI and has been motivated by the urgent need to find suitable replacements to the environmentally destructive CFC-based propellants currently used in the device and to further the understanding of the mechanisms of atomization. The experimental work was conducted using 1D phase-Doppler ***particle*** analyzer (PDPA), yielding the most detailed temporal and spatial analysis of the pMDI spray to date. Two formulations were studied to compare the performance of an 'ozone-friendly' hydrofluoroalkane propellant against that of a traditional placebo CFC-based mixture. The PDPA analysis was complemented by a visual investigation of the ***near*** -orifice flow ***field*** using ***copper*** laserstrobe microcinematography in an attempt to obtain information on the primary atomization process of the pMDI. This work was conducted in parallel with the theoretical investigation of the spray issued from a pMDI

CC A8745H Haemodynamics, pneumodynamics; A8770G Patient care and treatment; A8760F Optical and laser radiation (medical uses)

CT cinematography; drug delivery systems; ***laser*** applications in ***medicine*** ; pneumodynamics; sprays

ST laser diagnostic techniques; spray; pressurized metered-dose inhaler; compact pressurized spray dispenser; multiple doses oral inhalation; finely dispersed drug; pulmonary diseases; asthma; environmentally destructive CFC-based propellants; atomization; 1D phase-Doppler particle analyzer; temporal analysis; spatial analysis; hydrofluoroalkane propellant; placebo CFC-based mixture; near-orifice flow field; Cu laserstrobe microcinematography

ET D

L3 ANSWER 61 OF 61 INSPEC (C) 2006 IEE on STN

AN 1989:3267715 INSPEC DN A1989-010683

TI A brown dwarf companion as an explanation of the asymmetry in the beta Pictoris disk

AU Whitmire, D.P.; Matese, J.J.; (Dept. of Phys., Southwestern Louisiana Univ., Lafayette, LA, USA), Tomley, L.J.

SO Astronomy and Astrophysics (Sept. 1988), vol.203, no.1, pt.1, p. L13-15, 19 refs.
CODEN: AAEJAF, ISSN: 0004-6361

DT Journal

TC Theoretical

CY Germany, Federal Republic of

LA English

AB The disk in beta Pictoris is observed to be asymmetric with the NE branch longer and brighter than the SW branch. The ***optical*** depth of the ***disk*** implies that the observed ***particles*** would relax to an axisymmetric configuration on a timescale much shorter than the probable age of the system. Thus, the persistence of the asymmetry

suggests the existence of a shorter perturbing timescale. A model is investigated in which this shorter timescale is associated with the eccentricity perturbation timescale of a brown dwarf companion. If the observed outer disk edge at .apprxeq.1000 ***AU*** is due to orbital instability, the companion's periastron distance is in the range 1500-1900 ***AU***, corresponding to a mass range of 0.02-0.08 MX2299, respectively. The companion's primordial inclination and eccentricity are statistically stable from perturbations by passing field stars over the lifetime of the system. Brown dwarfs in the above mass range are potentially observable in the near IR at .beta. Pics distance

CC A9720G Main-sequence: intermediate type A and F stars; A9720J Main-sequence: late-type stars (G, K, and M); A9780 Binary and multiple stars; A9710F Circumstellar shells and expanding envelopes; A9710N Stellar masses

CT binary stars; celestial mechanics; circumstellar shells; dwarf stars; stars; stellar mass

ST circumstellar disk asymmetry; disk relaxation time; AS V star; disk age; outer disk edge location; orbital eccentricity statistical stability; near-IR source; field stars perturbations; Nemesis hypothesis; brown dwarf companion; beta Pictoris disk; axisymmetric configuration; shorter perturbing timescale; eccentricity perturbation; orbital instability; companion's periastron distance; primordial inclination; passing field stars; 0.02 to 0.08 Msol; 500 Myr; 8E7 yr; 300 Tm; 225 to 285 Tm

PHP stellar mass 2.0E-02 to 8.0E-02 Msol; age 5.0E+08 yr; time 2.5E+15 s; size 3.0E+14 m; distance 2.25E+14 to 2.85E+14 m

ET V

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=> s ((gold or au or ag or silver or platinum or pt or cu or copper) (10a) (dispers? or sputter?)) (2
L4      5945 ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPER) (
      10A) (DISPERS? OR SPUTTER?)) (25A) (DIELECTIRC OR SILICA OR SILICON
      OR ALUMINUM OR ALN OR SIO2)
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L5      7716 ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPER) (
      10A) (DISPERS? OR SPUTTER?)) (25A) (DIELECTRIC OR SILICA OR SILICON
      OR ALUMINUM OR ALN OR SIO2)
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=> d his

(FILE 'HOME' ENTERED AT 16:35:09 ON 20 MAR 2006)

FILE 'CAPLUS, INSPEC' ENTERED AT 16:35:18 ON 20 MAR 2006

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L1      182532 S ((NEAR(3A)FIELD) OR MASK OR MASKING OR RENS OR SUPERRESOLUTIO
L2      1842 S ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPE
L3      61 S L2 AND ((OPTICAL OR LASER OR INFORMATION OR COMPACT) (3A) (DISK
L4      5945 S ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPE
L5      7716 S ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPE
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=> s l1 and l5

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L6      126 L1 AND L5
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=> s l6 and ((optical or laser or information or compact) (3a) (disk or disc or med?))
L7      1 L6 AND ((OPTICAL OR LASER OR INFORMATION OR COMPACT) (3A) (DISK
      OR DISC OR MED?))
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=> d al

'AL' IS NOT A VALID FORMAT FOR FILE 'CAPLUS'

The following are valid formats:

```
ABS ----- GI and AB
ALL ----- BIB, AB, IND, RE
APPS ----- AI, PRAI
BIB ----- AN, plus Bibliographic Data and PI table (default)
CAN ----- List of CA abstract numbers without answer numbers
CBIB ----- AN, plus Compressed Bibliographic Data
CLASS ----- IPC, NCL, ECLA, FTERM
DALL ----- ALL, delimited (end of each field identified)
DMAX ----- MAX, delimited for post-processing
FAM ----- AN, PI and PRAI in table, plus Patent Family data
FBIB ----- AN, BIB, plus Patent FAM
```

IND ----- Indexing data
 IPC ----- International Patent Classifications
 MAX ----- ALL, plus Patent FAM, RE
 PATS ----- PI, SO
 SAM ----- CC, SX, TI, ST, IT
 SCAN ----- CC, SX, TI, ST, IT (random display, no answer numbers;
 SCAN must be entered on the same line as the DISPLAY,
 e.g., D SCAN or DISPLAY SCAN)
 STD ----- BIB, CLASS

 IABS ----- ABS, indented with text labels
 IALL ----- ALL, indented with text labels
 IBIB ----- BIB, indented with text labels
 IMAX ----- MAX, indented with text labels
 ISTD ----- STD, indented with text labels

 OBIB ----- AN, plus Bibliographic Data (original)
 OIBIB ----- OBIB, indented with text labels

 SBIB ----- BIB, no citations
 SIBIB ----- IBIB, no citations

 HIT ----- Fields containing hit terms
 HITIND ----- IC, ICA, ICI, NCL, CC and index field (ST and IT)
 containing hit terms
 HITRN ----- HIT RN and its text modification
 HITSTR ----- HIT RN, its text modification, its CA index name, and
 its structure diagram
 HITSEQ ----- HIT RN, its text modification, its CA index name, its
 structure diagram, plus NTE and SEQ fields
 FHITSTR ----- First HIT RN, its text modification, its CA index name, and
 its structure diagram
 FHITSEQ ----- First HIT RN, its text modification, its CA index name, its
 structure diagram, plus NTE and SEQ fields
 KWIC ----- Hit term plus 20 words on either side
 OCC ----- Number of occurrence of hit term and field in which it occurs

To display a particular field or fields, enter the display field codes. For a list of the display field codes, enter HELP DFIELDS at an arrow prompt (=>). Examples of formats include: TI; TI,AU; BIB,ST; TI,IND; TI,SO. You may specify the format fields in any order and the information will be displayed in the same order as the format specification.

All of the formats (except for SAM, SCAN, HIT, HITIND, HITRN, HITSTR, FHITSTR, HITSEQ, FHITSEQ, KWIC, and OCC) may be used with DISPLAY ACC to view a specified Accession Number.

ENTER DISPLAY FORMAT (BIB):d his
 'D' IS NOT A VALID FORMAT FOR FILE 'CAPLUS'

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 ALL ----- BIB, AB, IND, RE
 APPS ----- AI, PRAI
 BIB ----- AN, plus Bibliographic Data and PI table (default)
 CAN ----- List of CA abstract numbers without answer numbers
 CBIB ----- AN, plus Compressed Bibliographic Data
 CLASS ----- IPC, NCL, ECLA, FTERM
 DALL ----- ALL, delimited (end of each field identified)
 DMAX ----- MAX, delimited for post-processing
 FAM ----- AN, PI and PRAI in table, plus Patent Family data
 FBIB ----- AN, BIB, plus Patent FAM
 IND ----- Indexing data
 IPC ----- International Patent Classifications
 MAX ----- ALL, plus Patent FAM, RE
 PATS ----- PI, SO
 SAM ----- CC, SX, TI, ST, IT
 SCAN ----- CC, SX, TI, ST, IT (random display, no answer numbers;
 SCAN must be entered on the same line as the DISPLAY,
 e.g., D SCAN or DISPLAY SCAN)
 STD ----- BIB, CLASS

IABS ----- ABS, indented with text labels
 IALL ----- ALL, indented with text labels
 IBIB ----- BIB, indented with text labels
 IMAX ----- MAX, indented with text labels
 ISTD ----- STD, indented with text labels

 OBIB ----- AN, plus Bibliographic Data (original)
 OIBIB ----- OBIB, indented with text labels

 SBIB ----- BIB, no citations
 SIBIB ----- IBIB, no citations

 HIT ----- Fields containing hit terms
 HITIND ----- IC, ICA, ICI, NCL, CC and index field (ST and IT)
 containing hit terms
 HITRN ----- HIT RN and its text modification
 HITSTR ----- HIT RN, its text modification, its CA index name, and
 its structure diagram
 HITSEQ ----- HIT RN, its text modification, its CA index name, its
 structure diagram, plus NTE and SEQ fields
 FHITSTR ----- First HIT RN, its text modification, its CA index name, and
 its structure diagram
 FHITSEQ ----- First HIT RN, its text modification, its CA index name, its
 structure diagram, plus NTE and SEQ fields
 KWIC ----- Hit term plus 20 words on either side
 OCC ----- Number of occurrence of hit term and field in which it occurs

To display a particular field or fields, enter the display field codes. For a list of the display field codes, enter HELP DFIELDS at an arrow prompt (=>). Examples of formats include: TI; TI,AU; BIB,ST; TI,IND; TI,SO. You may specify the format fields in any order and the information will be displayed in the same order as the format specification.

All of the formats (except for SAM, SCAN, HIT, HITIND, HITRN, HITSTR, FHITSTR, HITSEQ, FHITSEQ, KWIC, and OCC) may be used with DISPLAY ACC to view a specified Accession Number.

ENTER DISPLAY FORMAT (BIB):d kwic
 'D' IS NOT A VALID FORMAT FOR FILE 'CAPLUS'

The following are valid formats:

ABS ----- GI and AB
 ALL ----- BIB, AB, IND, RE
 APPS ----- AI, PRAI
 BIB ----- AN, plus Bibliographic Data and PI table (default)
 CAN ----- List of CA abstract numbers without answer numbers
 CBIB ----- AN, plus Compressed Bibliographic Data
 CLASS ----- IPC, NCL, ECLA, FTERM
 DALL ----- ALL, delimited (end of each field identified)
 DMAX ----- MAX, delimited for post-processing
 FAM ----- AN, PI and PRAI in table, plus Patent Family data
 FBIB ----- AN, BIB, plus Patent FAM
 IND ----- Indexing data
 IPC ----- International Patent Classifications
 MAX ----- ALL, plus Patent FAM, RE
 PATS ----- PI, SO
 SAM ----- CC, SX, TI, ST, IT
 SCAN ----- CC, SX, TI, ST, IT (random display, no answer numbers;
 SCAN must be entered on the same line as the DISPLAY,
 e.g., D SCAN or DISPLAY SCAN)
 STD ----- BIB, CLASS

 IABS ----- ABS, indented with text labels
 IALL ----- ALL, indented with text labels
 IBIB ----- BIB, indented with text labels
 IMAX ----- MAX, indented with text labels
 ISTD ----- STD, indented with text labels

 OBIB ----- AN, plus Bibliographic Data (original)
 OIBIB ----- OBIB, indented with text labels

SBIB ----- BIB, no citations
 SIBIB ----- IBIB, no citations
 .
 HIT ----- Fields containing hit terms
 HITIND ----- IC, ICA, ICI, NCL, CC and index field (ST and IT)
 containing hit terms
 HITRN ----- HIT RN and its text modification
 HITSTR ----- HIT RN, its text modification, its CA index name, and
 its structure diagram
 HITSEQ ----- HIT RN, its text modification, its CA index name, its
 structure diagram, plus NTE and SEQ fields
 FHITSTR ----- First HIT RN, its text modification, its CA index name, and
 its structure diagram
 FHITSEQ ----- First HIT RN, its text modification, its CA index name, its
 structure diagram, plus NTE and SEQ fields
 KWIC ----- Hit term plus 20 words on either side
 OCC ----- Number of occurrence of hit term and field in which it occurs

To display a particular field or fields, enter the display field codes. For a list of the display field codes, enter HELP DFIELDS at an arrow prompt (=>). Examples of formats include: TI; TI,AU; BIB,ST; TI,IND; TI,SO. You may specify the format fields in any order and the information will be displayed in the same order as the format specification.

All of the formats (except for SAM, SCAN, HIT, HITIND, HITRN, HITSTR, FHITSTR, HITSEQ, FHITSEQ, KWIC, and OCC) may be used with DISPLAY ACC to view a specified Accession Number.
 ENTER DISPLAY FORMAT (BIB):bib

L7 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2003:434875 CAPLUS
 DN 139:14722
 TI Optical devices having highly dispersive metallo-dielec. micropatterns
 IN Polman, Albert; Strohhoefner, Christof; Van Blaaderen, Alfons
 PA BTG International Limited, UK
 SO PCT Int. Appl., 33 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003046657	A2	20030605	WO 2002-GB5283	20021125
	WO 2003046657	A3	20030710		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
PRAI	GB 2001-28147	A	20011123		

=> s ((gold or au or ag or silver or platinum or pt or cu or copper) and (dispers? or sputter?)) a
 L8 37902 ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPER)
 AND (DISPERS? OR SPUTTER?)) AND (DIELECTRIC OR SILICA OR SILICON
 OR ALUMINUM OR ALN OR SIO2)

=> s l1 and l8
 L9 1214 L1 AND L8

=> s l9 and ((optical or laser or information or compact)(3a)(disk or disc or med?))
 L10 23 L9 AND ((OPTICAL OR LASER OR INFORMATION OR COMPACT)(3A)(DISK
 OR DISC OR MED?))

=> s l10 not l3

=> d'all 1-13

L11 ANSWER 1 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2005:728353 CAPLUS
 DN 143:375145
 ED Entered STN: 11 Aug 2005
 TI Optical properties of metal-oxide films in super- ***RENS***
 AU Liu, Qian; Fukaya, Toshio; Tominaga, Junji; Iwanabe, Yasuhiko; Shima, Takayuki
 CS Center for Applied Near-Field Optics Research (CAN-FOR), National Institute of Advanced Industrial Science and Technology (AIST), Ibaraki, 305-8562, Japan
 SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Brief Communications & Review Papers (2005), 44(7A), 5156-5163
 CODEN: JAPNDE
 PB Japan Society of Applied Physics
 DT Journal
 LA English
 CC 73-2 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 AB The property of the optical transmittance and reflectance induced by structural changes in AgOx, PtOx and PdOx thin films, which are materials of key layer in ***superresoln*** . ***near*** - ***field*** structure (super- ***RENS***) ***optical*** ***disk*** , is investigated by Z-scan measurements and microscopic observations. The light intensity features of the transmittance and reflectance are clarified. Laser-irradiated decompn. of the noble metal oxides in the films and their decompn. thresholds are examd. The optical properties of the films result from bubbles induced by the chem. decompn. of the oxides and the metallic nanoparticles ***dispersed*** in the bubbles. The light-induced thermal features, reversible and irreversible properties, optical responses corresponding to the decompn. of the oxides, the influence on readout stability, and the signal intensity of the metal-oxide (MeO) super- ***RENS*** disks are also discussed for MeO films.
 ST optical property metal oxide film super ***RENS*** ***optical*** ***disk***
 IT Bubbles
 (deformation induced by O2 gas; optical properties of metal-oxide films in super- ***RENS***)
 IT Transition metal oxides
 RL: DEV (Device component use); USES (Uses)
 (noble metal oxides; optical properties of metal-oxide films in super- ***RENS***)
 IT Thermal decomposition
 (of metal oxides; optical properties of metal-oxide films in super- ***RENS***)
 IT Light scattering
 Optical damage threshold
 Optical ***disks***
 Optical recording
 Optical reflection
 Optical switching
 Optical transmission
 (***optical*** properties of metal-oxide films in super- ***RENS***)
 IT 1314-98-3, Zinc sulfide (ZnS), uses 7631-86-9, ***Silica*** , uses
 RL: DEV (Device component use); USES (Uses)
 (***dielec*** . thin film component; optical properties of metal-oxide films in super- ***RENS***)
 IT 11113-77-2, Palladium oxide 11113-88-5, ***Silver*** oxide 11129-89-8, ***Platinum*** oxide
 RL: DEV (Device component use); USES (Uses)
 (optical properties of metal-oxide films in super- ***RENS***)
 RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
 (1) Betzig, E; Science 1991, V251, P1468
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L11 ANSWER 2 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:292500 CAPLUS
DN 142:488344
ED Entered STN: 06 Apr 2005
TI Thermal decomposition of ***sputtered*** thin PtOx layers used in
super - ***resolution*** ***optical*** ***disks***
AU Kolobov, A. V.; Wilhelm, F.; Rogalev, A.; Shima, T.; Tominaga, J.
CS Center for Applied Near-Field Optics Research (CANFOR), National Institute
of Advanced Industrial Science and Technology (AIST), Tsukuba, 305-8562,
Japan
SO Applied Physics Letters (2005), 86(12), 121909/1-121909/3
CODEN: APPLAB; ISSN: 0003-6951
PB American Institute of Physics
DT Journal
LA English
CC 69-3 (Thermodynamics, Thermochemistry, and Thermal Properties)
Section cross-reference(s): 73, 74
AB Decompn. of ***sputtered*** PtOx layers has been studied by x-ray
absorption spectroscopy. X-ray absorption fine structure measurements
demonstrated that as-deposited films possess a compn. of PtOx (x=1.1-1.7).
Upon annealing, the metallic ***platinum*** phase is formed. The
formation of the metallic ***Pt*** phase starts at very early stages
of the decompn. process. The decompn. is not monotonic and slows down at
the final stage. The structure at intermediate stages of decompn. is a
mixt. of the starting phase and metallic ***Pt***.
ST thermal decompn ***sputtered*** ***platinum*** oxide
optical ***disk*** EXAFS XANES
IT Valence
(***Pt*** ; thermal decompn. of ***sputtered*** thin PtOx layers
used in ***super*** - ***resoln*** . ***optical***
disks studied by x-ray absorption)
IT Coordination number
(av. ***Pt*** -0; thermal decompn. of ***sputtered*** thin PtOx
layers used in ***super*** - ***resoln*** . ***optical***
disks studied by x-ray absorption)
IT Annealing
(redn. by; thermal decompn. of ***sputtered*** thin PtOx layers
used in ***super*** - ***resoln*** . ***optical***
disks studied by x-ray absorption)
IT Films
(***sputter*** -deposited; thermal decompn. of ***sputtered***
thin PtOx layers used in ***super*** - ***resoln*** .
optical ***disks*** studied by x-ray absorption)
IT Bond length
EXAFS spectra
Optical ***disks***
Thermal decomposition
XANES spectra
(thermal decompn. of ***sputtered*** thin PtOx layers used in
super - ***resoln*** . ***optical*** ***disks***
studied by x-ray absorption)
IT Reduction
(thermal; thermal decompn. of ***sputtered*** thin PtOx layers used
in ***super*** - ***resoln*** . ***optical*** ***disks***

studied by x-ray absorption)
 IT 1314-15-4, ***Platinum*** oxide (PtO2)
 RL: PRP (Properties)
 (ref.; thermal decompn. of ***sputtered*** thin PtOx layers used in
 super - ***resoln*** . ***optical*** ***disks***
 studied by x-ray absorption)
 IT 1314-98-3, Zinc sulfide, properties 7631-86-9, ***Silica*** ,
 properties
 RL: PRP (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (thermal decompn. of ***sputtered*** thin PtOx layers used in
 super - ***resoln*** . ***optical*** ***disks***
 contg.)
 IT 583825-88-1, ***Platinum*** oxide (PtO1.6)
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical
 process); PRP (Properties); TEM (Technical or engineered material use);
 PROC (Process); USES (Uses)
 (thermal decompn. of ***sputtered*** thin PtOx layers used in
 super - ***resoln*** . ***optical*** ***disks***
 studied by x-ray absorption)
 IT 7440-06-4, ***Platinum*** , properties
 RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation,
 nonpreparative)
 (thermal decompn. of ***sputtered*** thin PtOx layers used in
 super - ***resoln*** . ***optical*** ***disks***
 studied by x-ray absorption)
 IT 583825-87-0, ***Platinum*** oxide (PtO1.1)
 RL: PRP (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (thermal decompn. of ***sputtered*** thin PtOx layers used in
 super - ***resoln*** . ***optical*** ***disks***
 studied by x-ray absorption)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE

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L11 ANSWER 3 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:605930 CAPLUS

DN 141:148180

ED Entered STN: 29 Jul 2004

TI Optical information recording device and manufacture of medium therefor
 and flat probe array

IN Fukuda, Hiroaki

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G11B007-135

ICS G01N013-10; G01N013-14; G11B007-22; G11B007-24; G12B021-06

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004213702	A2	20040729	JP 2002-378234	20021226
PRAI	JP 2002-378234		20021226		

CLASS	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	JP 2004213702	ICM	G11B007-135
		ICS	G01N013-10; G01N013-14; G11B007-22; G11B007-24; G12B021-06
		IPCI	G11B0007-135 [ICM,7]; G01N0013-10 [ICS,7]; G01N0013-14 [ICS,7]; G11B0007-22 [ICS,7]; G11B0007-24 [ICS,7]; G12B0021-06 [ICS,7]
		FTERM	5D029/JA01; 5D029/JA04; 5D029/JB08; 5D029/JB13; 5D029/LA12; 5D029/LA13; 5D029/LA16; 5D029/LC11; 5D119/AA11; 5D119/AA13; 5D119/AA22; 5D119/BA01; 5D119/BB04; 5D119/BB06; 5D119/BB12; 5D119/BB13; 5D119/CA06; 5D119/CA20; 5D119/DA01; 5D119/DA05; 5D119/EB02; 5D119/FA05; 5D119/JA02; 5D119/JA11; 5D119/JA12; 5D119/JA32; 5D119/JA34; 5D119/JA43; 5D119/MA06; 5D119/NA05; 5D789/AA11; 5D789/AA13; 5D789/AA22; 5D789/BA01; 5D789/BB04; 5D789/BB06; 5D789/BB12; 5D789/BB13; 5D789/CA06; 5D789/CA20; 5D789/DA01; 5D789/DA05; 5D789/EB02; 5D789/FA05; 5D789/JA02; 5D789/JA11; 5D789/JA12; 5D789/JA32; 5D789/JA34; 5D789/JA43; 5D789/MA06; 5D789/NA05

AB The invention relates to the optical information recording device capable of detecting signals at high efficiency by using the ***near***
 field effect of light for the regeneration of high d. optical information which is not limited by the wavelength of the light.

ST ***optical*** ***information*** recording device ***medium***

IT Vapor deposition process
 (chem.; optical information recording device and flat probe array)

IT Optical recording materials
 Sputtering
 (optical information recording device and flat probe array)

IT Telluride glasses
 RL: DEV (Device component use); USES (Uses)
 (optical information recording device and flat probe array)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, ***Silica***, uses
 RL: DEV (Device component use); USES (Uses)
 (optical information recording device and flat probe array)

IT 7782-40-3, Diamond, processes
 RL: DEV (Device component use); EPR (Engineering process); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (optical information recording device and flat probe array)

IT 7440-22-4, ***Silver***, uses 7440-36-0, Antimony, uses 7440-74-6, Indium, uses
 RL: DEV (Device component use); USES (Uses)
 (telluride glass; optical information recording device and flat probe array)

L11 ANSWER 4 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:218959 CAPLUS

DN 140:262534

ED Entered STN: 19 Mar 2004

TI Sandblast-resistant ***masks*** provided in thin-film deposition process and apparatus

IN Oda, Yoshifumi

PA Shibaura Mechatronics Corporation, Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.
 CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C23C014-04
 ICS C23C014-34

CC 76-3 (Electric Phenomena)
 Section cross-reference(s): 56, 74

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004084043	A2	20040318	JP 2002-249986	20020829
PRAI	JP 2002-249986		20020829		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES

JP 2004084043 ICM C23C014-04
ICS C23C014-34
IPCI C23C0014-04 [ICM,7]; C23C0014-34 [ICS,7]
FTERM 4K029/BC00; 4K029/BD00; 4K029/CA05; 4K029/HA02;
4K029/HA04

AB The title ***sputtering*** ***masks*** withstanding against sandblasting in cleaning deposits employ a thermal conductive metal for their main portion and a hard metal on their edge portions to avoid deformation. The hard metal for the edges may be stainless steel, Ti, W, Ta, Mo, or their alloys. The thermal conductive metal for the main body may be ***Cu*** for effective heat releasing of ***sputtering*** heat from polycarbonate substrates. The use of the hard metal on their edge portions effectively prevents deformation of the ***masks*** in sandblast cleaning. The ***sputtering*** of the thin-film deposition process may be applicable to Si thin-film deposition in manufg. DVD devices.

ST stainless steel ***sputtering*** ***mask*** sandblast resistance thin film deposition; hard metal ***sputtering*** ***mask*** sandblast resistance thin film deposition

IT ***Optical*** ***disks***
(DVD, manuf. of; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT Sandblasting
(for removal of deposits; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT Coating materials
(***masking*** , ***sputtering*** ***masks*** ; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT ***Sputtering***
(***masks*** for; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT Deformation (mechanical)
(of ***masks*** , prevention; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT Thermal conductors
(***sputtering*** ***masks*** , main portions; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT Polycarbonates, properties
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(substrate, ***sputtering*** on, for DVD; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT Vapor deposition process
(thin-film; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT 12597-68-1, Stainless steel, properties
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT 7439-98-7, Molybdenum, properties 7440-25-7, Tantalum, properties
7440-32-6, Titanium, properties 7440-33-7, Tungsten, properties
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(***sputtering*** ***mask*** edge portions; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT 7440-50-8, ***Copper*** , properties
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(***sputtering*** ***mask*** main body; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT 7440-21-3P, ***Silicon*** , properties
RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
(thin film ***sputtering*** , ***masks*** for; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

L11 ANSWER 5 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:910297 CAPLUS

DN 139:388568

ED Entered STN: 21 Nov 2003

TI Apparatus and method for manufacture of ***optical*** recording

media

IN Shirasagi, Toshihiko
PA Sony Disc Technology, Inc., Japan
SO Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G11B007-26
ICS G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003331482	A2	20031121	JP 2002-132466	20020508
PRAI	JP 2002-132466		20020508		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003331482	ICM	G11B007-26
	ICS	G11B007-24
	IPCI	G11B0007-26 [ICM,7]; G11B0007-24 [ICS,7]

AB In manuf. of the recording media by (1) injection molding 1st substrates and 2nd substrates, (2) forming 1st film materials as reflection films on data-recorded surfaces of the 1st substrates, and (3) bonding the 2nd substrates with the data-recorded surfaces via adhesive layers, 2nd film materials are formed on bonded surfaces of the 2nd substrates via ***mask*** materials having visible information. In case of forming 2nd film materials as semitransparent films on the data-recorded surfaces of the 2nd substrates, 3rd film materials are formed on bonded surfaces of the 1st substrates via ***mask*** materials having visible information before formation of the 1st films. The recording media may have protective layers on the data-recorded surfaces of the substrates. The app. has a film-formation app. contg. a detachable ***mask*** material having visible information for forming semitransparent films on substrates both using and without using the ***mask*** materials. DVD-ROMs having visible information are obtained without printing processes.

ST ***optical*** recording ***medium*** manuf visible
information ; ***disk*** ***optical*** manuf visible
information recorded ***mask*** ; DVD ROM manuf visible
information

IT ***Optical*** ROM ***disks***
(DVD-ROM; app. and method for manuf. of ***optical*** recording
media having visible ***information***)

IT ***Sputtering***
Sputtering devices
(app. and method for manuf. of ***optical*** recording
media having visible ***information***)

IT 7440-22-4, ***Silver*** , processes 7440-57-5, ***Gold*** ,
processes
RL: PEP (Physical, engineering or chemical process); PYP (Physical
process); TEM (Technical or engineered material use); PROC (Process); USES
(Uses)

(app. and method for manuf. of ***optical*** recording
media having visible ***information***)

IT 7429-90-5, ***Aluminum*** , processes
RL: PEP (Physical, engineering or chemical process); PYP (Physical
process); TEM (Technical or engineered material use); PROC (Process); USES
(Uses)

(reflection films; app. and method for manuf. of ***optical***
recording ***media*** having visible ***information***)

IT 7440-21-3, ***Silicon*** , processes
RL: PEP (Physical, engineering or chemical process); PYP (Physical
process); TEM (Technical or engineered material use); PROC (Process); USES
(Uses)

(semitransparent films; app. and method for manuf. of ***optical***
recording ***media*** having visible ***information***)

L11 ANSWER 6 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:363469 CAPLUS

DN 136:377358

ED Entered STN: 16 May 2002

TI ***Super*** - ***resolution*** readout for magneto-optical disk by
 AU optimizing the deposition condition of non-magnetic ***mask*** layer
 Shima, Takayuki; Kim, Johoo; Fuji, Hiroshi; Atoda, Nobufumi; Tominaga,
 Junji
 CS Laboratory for Advanced Optical Technology (LAOTEC), National Institute of
 Advanced Industrial Science and Technology (AIST), Tsukuba Central 4,
 1-1-1 Higashi, Tsukuba, Ibaraki, 305-8562, Japan
 SO Materials Research Society Symposium Proceedings (2001), 674 (Applications
 of Ferromagnetic and Optical Materials, Storage and Magnetoelectronics),
 V2.2.1-V2.2.7
 CODEN: MRSPDH; ISSN: 0272-9172
 PB Materials Research Society
 DT Journal
 LA English
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 AB ***Super*** - ***resoln*** . ***near*** - ***field*** structure
 (***Super*** - ***RENS***) was prepd. by a heliconwave-plasma
 sputtering method to improve the disk property that is combined
 with a magneto-optical (MO) recording disk. Antimony and ***silver***
 -oxide ***mask*** layers were prepd. by the method and refractive
 indexes were measured. Recording and retrieving of signals beyond the
 resoln. limit (<370 nm) were achieved for both ***mask*** cases.
 Attempts to optimize the disk structure were also made using a
 conventional ***sputtering*** method. The smallest mark size was
 around 200 nm and the highest carrier-to-noise ratio (CNR) was 30 dB for
 300-nm mark and 22 dB for 250-nm, when using a laser wavelength of 780 nm
 and a numerical aperture of 0.53. It was found that there is a competing
 super - ***resoln*** . mechanism besides ***Super*** -
 RENS that appears when high readout laser power is applied. This
 mechanism played rather an important role at least in the mark-size range
 of 200-370 nm.
 ST magneto-optical disk nonmagnetic ***mask*** layer deposition condition
 effect
 IT Magnetic disks
 Optical ***disks***
 (magneto-optical ***disks*** ; ***super*** - ***resoln*** .
 readout for magneto-optical disk by optimizing deposition condition of
 non-magnetic ***mask*** layer)
 IT ***Sputtering***
 (***super*** - ***resoln*** . readout for magneto-optical disk by
 optimizing deposition condition of non-magnetic ***mask*** layer)
 IT Refractive index
 (***super*** - ***resoln*** . readout for magneto-optical disk by
 optimizing deposition condition of non-magnetic ***mask*** layer in
 relation to)
 IT 125169-67-7, Cobalt 9, iron 71, terbium 20 (atomic)
 RL: TEM (Technical or engineered material use); USES (Uses)
 (recording layer; ***super*** - ***resoln*** . readout for
 magneto-optical disk by optimizing deposition condition of non-magnetic
 mask layer)
 IT 7440-36-0, Antimony, properties 11113-88-5, ***Silver*** oxide
 RL: PRP (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (***super*** - ***resoln*** . readout for magneto-optical disk by
 optimizing deposition condition of non-magnetic ***mask*** layer)
 IT 7440-22-4, ***Silver*** , uses 12033-89-5, ***Silicon*** nitride,
 uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (***super*** - ***resoln*** . readout for magneto-optical disk by
 optimizing deposition condition of non-magnetic ***mask*** layer)
 RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
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 (2) Fuji, H; Jpn J Appl Phys 2000, V39, P980 CAPLUS
 (3) Kikukawa, T; Abstracts of the Optical Data Storage Topical Meeting 2001,
 PTuD1
 (4) Kim, J; Appl Phys Lett 2000, V77, P1774 CAPLUS
 (5) Kim, J; J Magn Soc Japan 2001, V25, P387
 (6) Lannin, J; Phys Rev 1977, VB15, P3863
 (7) Renucci, J; Phys Status Solidi 1973, Vb60, P299
 (8) Shima, T; J Vac Sci & Technol A (in press)

- (9) Silva, T; SPIE Proceedings 1993, V1855, P180 CAPLUS
(10) Tominaga, J; Appl Phys Lett 1998, V73, P2078 CAPLUS
(11) Tominaga, J; Jpn J Appl Phys 2000, V39, P957 CAPLUS
(12) Wang, X; Thin Solid Films 1999, V338, P105

L11 ANSWER 7 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2001:302137 CAPLUS

DN 135:114396

ED Entered STN: 29 Apr 2001

TI High-density read-only memory disc with ***super*** ***resolution***
reflective layer

AU Kikukawa, Takashi; Kato, Tatsuya; Shingai, Hiroshi; Utsunomiya, Hajime
CS Data Storage Technology Center, TDK Chikumagawa the 1st. Technical Center,
TDK Corporation, Nagano, 385-0009, Japan

SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes &
Review Papers (2001), 40(3B), 1624-1628
CODEN: JAPNDE; ISSN: 0021-4922

PB Japan Society of Applied Physics

DT Journal

LA English

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

Section cross-reference(s): 73

AB The authors report that ***super*** - ***resoln*** . readout occurred
in read-only memory (ROM) disks with very simple materials and structure.
By adopting a 15-nm-thick layer of Ge, Si, Mo, and W as a reflective
layer, a carrier-to-noise ratio over 40 dB could be obtained from small
pits which were below the resoln. limit of optical system. Exptl. and
thermal simulation results showed that the ***super*** ***resoln***
. readout phenomenon in the disks is strongly correlated to the film
temps. that are reached when a laser spot is irradiated on the films.
Signal characterizations suggest that the ***super*** ***resoln***
. readout mechanism of the disks is different from those of conventional
ROM and conventional ***super*** - ***resoln*** . ROM disks. The
authors have named them Super-ROM disks.

ST read only memory ***disk*** ***optical*** ***super***
resoln reflection; temp optical reflection read only memory disk
super ***resoln***

IT ***Optical*** ROM ***disks***

Optical reflection

Thermooptical effect

(high-d. read-only memory disk with ***super*** ***resoln*** .
reflective layer)

IT Metals, properties

RL: DEV (Device component use); PRP (Properties); USES (Uses)

(reflective layer; high-d. read-only memory disk with ***super***
resoln . reflective layer)

IT Polycarbonates, uses

RL: DEV (Device component use); USES (Uses)

(substrate; high-d. read-only memory disk with ***super***
resoln . reflective layer)

IT 12033-89-5, ***silicon*** nitride si3n4, uses

RL: DEV (Device component use); USES (Uses)

(high-d. read-only memory disk with ***super*** ***resoln*** .
reflective layer)

IT 7429-90-5, ***Aluminum*** , properties 7439-89-6, Iron, properties

7439-96-5, Manganese, properties 7439-98-7, Molybdenum, properties

7440-02-0, Nickel, properties 7440-03-1, Niobium, properties

7440-05-3, Palladium, properties 7440-06-4, ***Platinum*** ,
properties 7440-21-3, ***Silicon*** , properties 7440-22-4,

Silver , properties 7440-25-7, Tantalum, properties 7440-31-5,

Tin, properties 7440-32-6, Titanium, properties 7440-33-7, Tungsten,

properties 7440-44-0, Carbon, properties 7440-47-3, Chromium,

properties 7440-48-4, Cobalt, properties 7440-50-8, ***Copper*** ,

properties 7440-56-4, Germanium, properties 7440-57-5, ***Gold*** ,

properties 7440-62-2, Vanadium, properties 7440-66-6, Zinc, properties

7440-67-7, Zirconium, properties 7440-69-9, Bismuth, properties

7440-74-6, Indium, properties 13494-80-9, Tellurium, properties

RL: DEV (Device component use); PRP (Properties); USES (Uses)

(reflective layer; high-d. read-only memory disk with ***super***
resoln . reflective layer)

IT 7727-37-9, Nitrogen, processes

RL: PEP (Physical, engineering or chemical process); PROC (Process)
(***sputtering*** gas mixt. component; high-d. read-only memory
disk with ***super*** ***resoln*** . reflective layer)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

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- (3) Hatakeyama, M; Jpn J Appl Phys 2000, V39, P752 CAPLUS
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- (6) Nagata, K; Jpn J Appl Phys 1999, V38, P1679 CAPLUS
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- (9) Tominaga, J; Appl Phys Lett 1998, V73, P2078 CAPLUS

L11 ANSWER 8 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:639135 CAPLUS

DN 133:215528

ED Entered STN: 14 Sep 2000

TI Magneto- ***optical*** recording ***medium*** with ***super***
resolution

IN Hirokane, Junji; Iwata, Noboru; Takahashi, Akira

PA Sharp Kabushiki Kaisha, Japan

SO U.S., 57 pp.

CODEN: USXXAM

DT Patent

LA English

IC ICM G11B005-66

INCL 428336000

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

Section cross-reference(s): 77

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6117544	A	20000912	US 1999-336094	19990618
	JP 3492525	B2	20040203	JP 1998-173489	19980619
PRAI	JP 1998-173489	A	19980619		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 6117544	ICM	G11B005-66
	INCL	428336000
	IPCI	G11B0005-66 [ICM,7]
	IPCR	G11B0011-00 [I,C]; G11B0011-105 [I,A]
	NCL	428/819.200; 428/900.000
	ECLA	G11B011/105M1; G11B011/105M2D4
JP 3492525	IPCI	G11B0011-105 [ICM,7]

AB A recording layer and a flux adjustment layer have different magnetic polarities so that their magnetizations are countervailed at room temp., with the result that a weakened leakage magnetic flux is released therefrom. A reproducing layer, a reproducing assist layer and an in-plane magnetization layer exhibit in-plane magnetization at room temp. In a 1st temp. area having a temp. not more than the crit. temp. of the reproducing layer, the reproducing layer 1 exhibits in-plane magnetization so that magnetization of a recording magnetic domain is not copied to the reproducing layer. In contrast, a 2nd temp. area having a temp. rise between the crit. temp. and the Curie temp. of the reproducing layer, the flux adjustment layer and the in-plane magnetization layer have reached their Curie temps. and lost their magnetization; thus, a leakage magnetic flux generated by the magnetization of the recording magnetic domain is copied to the reproducing assist layer that is in a perpendicular magnetization state, and further copied to the reproducing layer. Also, in a 3rd temp. area having a temp. rise exceeding the Curie temp. of the reproducing layer, the reproducing layer has lost its magnetization.

ST ferromagnetic film magnetooptical recording disk

IT Ferromagnetic films

(in magnetooptical recording medium with ***super*** ***resoln***
.)

IT Rare earth alloys

Transition metal alloys

RL: TEM (Technical or engineered material use); USES (Uses)

(in magneto-optical recording medium with ***super*** ***resoln***
 .)
 IT ***Sputtering***
 (in prepn. of magneto-optical recording medium with ***super***
 resoln .)
 IT Magneto-optical recording materials
 Optical ***disks***
 (magneto-optical recording ***medium*** with ***super***
 resoln .)
 IT Thickness
 (magneto-optical recording medium with ***super*** ***resoln***
 in relation to)
 IT Electronic device fabrication
 (of magneto-optical recording medium with ***super*** ***resoln***
 .)
 IT 7429-90-5, ***Aluminum***, uses 7440-21-3, ***Silicon***, uses
 7440-25-7, Tantalum, uses 7440-32-6, Titanium, uses 11099-22-2
 11147-96-9 11148-71-3 12033-89-5, ***Silicon*** nitride, uses
 12036-40-7, Tantalum sesquioxide 24304-00-5, ***Aluminum*** nitride
 37239-25-1 56199-40-7 59762-78-6 60475-98-1, ***Aluminum***
 silicon nitride 68824-66-8, Iron 77, terbium 23 (atomic)
 75442-46-5, Iron 70, terbium 30 (atomic) 80954-87-6 87716-07-2
 91810-08-1 91810-10-5 94270-61-8 94858-24-9 124174-91-0, Cobalt
 10, iron 62, terbium 28 (atomic) 134085-05-5, Gadolinium, iron,
 neodymium 174878-50-3 192646-44-9, ***Aluminum***, gadolinium,
 iron 199600-64-1 201155-68-2, Gadolinium, holmium, iron 204921-07-3
 214483-61-1 290354-99-3, Cobalt 13.8, gadolinium 31, iron 55.2 (atomic)
 290355-00-9, Cobalt 10.6, iron 66.4, terbium 23 (atomic) 290355-01-0,
 Aluminum 25, gadolinium 8.25, iron 66.75 (atomic) 290355-02-1,
 Aluminum 7, gadolinium 27.9, iron 65.1 (atomic) 290355-03-2,
 Cobalt, dysprosium, gadolinium, iron, terbium 290355-04-3, Gadolinium,
 iron, titanium 290355-05-4, Gadolinium, iron, vanadium 290355-06-5,
 Gadolinium, iron, palladium 290355-07-6, ***Copper***, gadolinium,
 iron 290355-08-7, Gadolinium, iron, ***silicon*** 290355-09-8,
 Cobalt, gadolinium, iron, yttrium 290355-10-1, Cobalt, gadolinium, iron,
 titanium 290355-11-2, Cobalt, gadolinium, iron, vanadium 290355-12-3,
 Cobalt, gadolinium, iron, palladium 290355-13-4, Cobalt, ***copper***
 , iron, gadolinium 290355-14-5, Erbium, gadolinium, iron 290355-15-6,
 Cobalt, gadolinium, holmium, iron 290355-16-7, Cobalt, gadolinium,
 erbium, iron 290355-17-8, Cerium, gadolinium, iron 290355-18-9,
 Gadolinium, iron, praseodymium 290355-19-0, Gadolinium, iron, samarium
 290355-20-3, Cerium, cobalt, gadolinium, iron 290355-21-4, Cobalt,
 gadolinium, iron, praseodymium 290355-22-5, Cobalt, gadolinium, iron,
 samarium
 RL: TEM (Technical or engineered material use); USES (Uses)
 (in magneto-optical recording medium with ***super*** ***resoln***
 .)
 IT 7440-37-1, Argon, uses 7727-37-9, Nitrogen, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (in prepn. of magneto-optical recording medium with ***super***
 resoln .)
 IT 91651-04-6 94858-25-0
 RL: TEM (Technical or engineered material use); USES (Uses)
 (magneto-optical recording medium with ***super*** ***resoln***
 .)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE

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- (3) Hirokane; US 5939187 1999 CAPLUS
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 CAPLUS
- (5) Hirokane, J; Jpn J Appl Phys, Part 1 1996, V35(11), P5701 CAPLUS

L11 ANSWER 9 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:504060 CAPLUS

DN 133:244658

ED Entered STN: 26 Jul 2000

TI Surface-emitting lasers for optical ***near*** - ***field*** data
 storage

AU Koyama, Fumio; Shinada, Satoshi; Goto, Kenya; Iga, Kenichi

CS Precision and Intelligence Lab., Tokyo Institute of Technology, Yokohama,

Japan
SO Proceedings of SPIE-The International Society for Optical Engineering
(1999), 3899(Photonics Technology into the 21st Century: Semiconductors,
Microstructures, and Nanostructures), 344-350
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related
Properties)
Section cross-reference(s): 74, 76
AB One of the interesting applications of 2-dimensional VCSEL arrays is high
d. optical data storage. The authors proposed a micro-metal aperture
VCSEL for producing optical ***near*** - ***field*** . The
evanescent wave emitted from a small metal aperture formed on a VCSEL
surface is irradiated to an ***optical*** ***disk*** , such as a
phase change ***optical*** ***disk*** . The authors carried out a
near - ***field*** anal. on the radiation from the metal micro
aperture loaded on a VCSEL by using 2-dimensional finite element method
(FEM), showing a possibility of a spot size of <100 nm. The authors can
recycle the reflected wave from the metal aperture, when the authors
properly design the phase matching between the DBR mirror and the metal.
The authors can expect an improvement in a power conversion efficiency of
radiating ***near*** ***field*** light from the aperture by using
a 'photon recycling' effect. An expected efficiency and power d. are
discussed for 850 nm metal aperture VCSELs. The authors have fabricated
micro-metal aperture VCSELs by using focus ion beam etching. The size of
the fabricated apertures ranges from 100 nm and 400 nm. The authors have
realized sub-mA low threshold metal aperture VCSELs. The power d. is
.apprx.6 kW/cm². The authors will be able to improve the power d. by
reducing the oxide aperture in the cavity. The authors also discuss on
another way to increase the efficiency and the power d., such as using a
surface plasmon effect of a small metal tip formed on the surface. The
authors will discuss a possibility of optical ***near*** - ***field***
recording by using the proposed metal aperture VCSEL.
ST surface emitting laser optical ***near*** ***field*** data storage
IT ***Sputtering***
Sputtering
(etching, ion-beam, in fabrication; surface-emitting lasers for optical
near - ***field*** data storage)
IT Etching
Etching
(***sputter*** , ion-beam, in fabrication; surface-emitting lasers
for optical ***near*** - ***field*** data storage)
IT ***Optical*** ***disks***
Optical recording
Semiconductor device fabrication
Semiconductor lasers
(surface-emitting ***lasers*** for optical ***near*** -
field data storage)
IT 1303-00-0, Gallium arsenide, properties 37382-15-3, ***Aluminum***
gallium arsenide ((Al,Ga)As)
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(DBR; surface-emitting lasers for optical ***near*** - ***field***
data storage)
IT 7440-57-5, ***Gold*** , uses 22831-42-1, ***Aluminum*** arsenide
RL: DEV (Device component use); USES (Uses)
(surface-emitting lasers for optical ***near*** - ***field***
data storage)
IT 106070-10-4, ***Aluminum*** gallium arsenide al0.7ga0.3as
106312-09-8, ***Aluminum*** gallium arsenide al0.2ga0.8as
107121-46-0, ***Aluminum*** gallium arsenide al0.9ga0.1as
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(surface-emitting lasers for optical ***near*** - ***field***
data storage)
RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Betzig, E; Appl Phys Lett 1992, V61, P142 CAPLUS
(2) Fischer, U; Phys Rev Lett 1989, V62, P458 CAPLUS
(3) Goto, K; Jpn J Appl Phys 1998, V37(Pt 1, 4B), P2274
(4) Jager, R; Electron Lett 1997, V33, P330
(5) Koyama, F; OECC'98 1998, 16D1-4

- (6) Mihalcea, C; NAIR/OITDA Workshop on Ultrahigh Density Data Storage 1999
- (7) Ohtsu, M; Near-Field Nano/Atom Optics and Technology 1997
- (8) Partovi, A; ISOM/ODS'99 1999, ThC-1, P352
- (9) Shinada, S; CLEO-PR'99 1999, ThD-4
- (10) Shinada, S; Extended Abstracts of 1999 International Conference on Solid State Devices and Materials 1999, E-7-2
- (11) Ukita, H; Appl Opt 1989, V28, P4360

L11 ANSWER 10 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:177549 CAPLUS

DN 132:315744

ED Entered STN: 19 Mar 2000

TI A ***near*** - ***field*** recording and readout technology using a metallic probe in an ***optical*** ***disk***

AU Fuji, Hiroshi; Tominaga, Junji; Men, Liqiu; Nakano, Takashi; Katayama, Hiroyuki; Atoda, Nobufumi

CS Advanced Technology Research Laboratories, Sharp Corporation, Tenri, 632-8567, Japan

SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers (2000), 39(2B), 980-981

CODEN: JAPNDE; ISSN: 0021-4922

PB Japanese Journal of Applied Physics

DT Journal

LA English

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB The authors demonstrate a new ***near*** - ***field*** technol. that uses a metallic probe in an ***optical*** ***disk***. The metallic probe is produced in a focused spot on a readout layer composed of ***silver*** oxide. However the metallic probe is not transparent to far- ***field*** light, ***near*** - ***field*** light generated around it. Therefore, a mark of less than 100 nm in length could be recorded and reproduced by detecting the scattered light around the metallic probe and the mark.

ST ***near*** ***field*** recording readout technol metallic probe

optical ***disk***

IT ***Optical*** ***disks***

Refractive index

(***near*** - ***field*** recording and readout technol. using in situ produced ***Ag*** metallic probe in ***optical*** ***disk*** contg. AgOx layer)

IT Optical recording

(***near*** - ***field*** ; ***near*** - ***field*** recording and readout technol. using in situ produced ***Ag*** metallic probe in ***optical*** ***disk*** contg. AgOx layer)

IT 7440-22-4, ***Silver***, processes

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(metallic probe; ***near*** - ***field*** recording and readout technol. using in situ produced ***Ag*** metallic probe in ***optical*** ***disk*** contg. AgOx layer)

IT 16150-49-5, Germanium antimony telluride(Ge2Sb2Te5)

RL: DEV (Device component use); USES (Uses)

(***near*** - ***field*** recording and readout technol. using in situ produced ***Ag*** metallic probe in ***optical*** ***disk*** contg. AgOx layer)

IT 7782-44-7, Oxygen, properties

RL: PRP (Properties)

(***near*** - ***field*** recording and readout technol. using in situ produced ***Ag*** metallic probe in ***optical*** ***disk*** contg. AgOx layer fabricated by reactive ***sputtering*** using)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, ***Silica***, uses

RL: DEV (Device component use); USES (Uses)

(protective layer; ***near*** - ***field*** recording and readout technol. using in situ produced ***Ag*** metallic probe in ***optical*** ***disk*** contg. AgOx layer)

IT 20667-12-3, ***Silver*** oxide

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(read-out layer; ***near*** - ***field*** recording and readout technol. using in situ produced ***Ag*** metallic probe in

optical ***disk*** contg. AgOx layer)
 IT 132913-92-9, Germanium 2, antimony 2, tellurium 5(atomic)
 RL: DEV (Device component use); USES (Uses)
 (recording layer; ***near*** - ***field*** recording and readout
 technol. using in situ produced ***Ag*** metallic probe in
 optical ***disk*** contg. AgOx layer)
 RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
 (1) Awano, H; Appl Phys Lett 1996, V69, P4257 CAPLUS
 (2) Kaneko, M; Jpn J Appl Phys 1992, V31, P568
 (3) Schmidt, A; Thin Solid Films 1996, V281-282, P105 CAPLUS
 (4) Shintani, T; Jpn J Appl Phys 1992, V38, P1656
 (5) Shiratori, T; J Magn Soc Jpn 1998, V22, P47
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 (7) Tominaga, J; Appl Phys Lett 1998, V73, P2078 CAPLUS
 (8) Yasuda, K; Jpn J Appl Phys 1993, V32, P5210 CAPLUS
 (9) Yoshimura, S; Jpn J Appl Phys 1992, V31, P576

 L11 ANSWER 11 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 1999:606924 CAPLUS
 DN 131:222394
 ED Entered STN: 24 Sep 1999
 TI Magneto- ***optical*** recording ***medium*** and a recording
 method using such a medium
 IN Hirokane, Junji; Murakami, Yoshiteru; Takahashi, Akira
 PA Sharp Kabushiki Kaisha, Japan
 SO U.S., 24 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 IC ICM G11B005-66
 INCL 428332000
 CC 77-8 (Magnetic Phenomena)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5955191	A	19990921	US 1997-898270	19970722
	JP 3400251	B2	20030428	JP 1996-200014	19960730
PRAI	JP 1996-200014	A	19960730		

 CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 5955191	ICM	G11B005-66
	INCL	428332000
	IPCI	G11B0005-66 [ICM,6]
	IPCR	G11B0011-00 [I,C]; G11B0011-105 [I,A]
	NCL	428/332.000; 360/059.000; 360/131.000; 365/122.000; 369/013.430; 369/014.000; 369/275.200; 369/275.300; 428/336.000; 428/819.400; 428/900.000
	ECLA	G11B011/105B2; G11B011/105M2D4
JP 3400251	IPCI	G11B0011-105 [ICM,7]

 AB A ***super*** - ***resoln*** . magneto- ***optical*** recording
 medium has a reproducing layer, an in-plane magnetization layer
 and a recording layer. The reproducing layer and the recording layer are
 magnetostatically coupled, and each of the layers is made of a rare-earth
 transition-metal alloy which has a greater transition-metal sublattice
 moment than the compensation compn., and exhibits perpendicular
 magnetization, if it exists alone. At a temp. not more than the Curie
 temp., the in-plane magnetization layer is exchange-coupled with the
 reproducing layer so as to allow the reproducing layer to exhibit in-plane
 magnetization. Since the reproducing layer is allowed to exhibit in-plane
 magnetization by the in-plane magnetization layer, it is not necessary to
 use a material contg. a greater rare-earth metal sublattice moment as the
 reproducing layer. Therefore, at portions in the in-plane magnetization
 layer having temps. higher than the Curie temp., the directions of the
 transition-metal sublattice moments of the reproducing layer and the
 recording layer are aligned in parallel with each other. Thus, the
 reproducing polarity of this medium becomes the same as the polarity of a
 magneto- ***optical*** recording ***medium*** without a reproducing
 layer, thereby allowing compatibility with each other.
 ST magneto-optical recording disk ***sputtering*** rare earth alloy
 IT Magnetic disks

Magnetic disks
 Optical ***disks***
 Optical ***disks***
 (magneto-optical ***disks*** ; magneto-optical recording medium and
 recording method using such medium)
 IT Electronic device fabrication
 Magneto-optical recording
 Magneto-optical recording materials
 Reactive ***sputtering***
 Sputtering
 (magneto-optical recording medium and recording method using such
 medium)
 IT Rare earth alloys
 Transition metal alloys
 RL: TEM (Technical or engineered material use); USES (Uses)
 (magneto-optical recording medium and recording method using such
 medium)
 IT Films
 (***sputter*** -deposited; magneto-optical recording medium and
 recording method using such medium)
 IT 12033-89-5, ***Silicon*** nitride, processes 12727-34-3,
 Aluminum 27, iron 73 (atomic) 12780-16-4, ***Aluminum*** 25,
 iron 75 (atomic) 24304-00-5, ***Aluminum*** nitride 39309-74-5,
 Gadolinium 39, iron 61 (atomic) 53881-97-3, Cobalt 84, gadolinium 16
 (atomic) 60475-98-1, ***Aluminum*** ***silicon*** nitride
 82681-23-0, Gadolinium 20, iron 80 (atomic) 90538-38-8, Cobalt 32,
 gadolinium 20, iron 48 (atomic) 119675-75-1, Gadolinium 16, iron 84
 (atomic) 141711-53-7, Gadolinium 10, iron 90 (atomic) 162856-00-0,
 Cobalt 20.2, dysprosium 28, iron 51.8 (atomic) 184766-56-1, Cobalt 4.1,
 gadolinium 18, iron 77.9 (atomic) 242490-10-4, Cobalt 13, gadolinium 20,
 iron 67 (atomic) 242490-11-5, ***Aluminum*** 25, gadolinium 7.5,
 iron 67.5 (atomic) 242490-12-6, Cobalt 21.6, dysprosium 23, iron 55.4
 (atomic) 242490-13-7, Cobalt 14.4, gadolinium 10, iron 75.6 (atomic)
 242490-14-8, Cobalt 14.1, gadolinium 12, iron 73.9 (atomic) 242490-15-9,
 Cobalt 13.8, gadolinium 14, iron 72.2 (atomic) 242490-16-0, Cobalt 13.4,
 gadolinium 16, iron 70.6 (atomic) 242490-17-1, Cobalt 13.1, gadolinium
 18, iron 68.9 (atomic) 242490-18-2, Cobalt 12.8, gadolinium 20, iron
 67.2 (atomic) 242490-19-3, Cobalt 12.5, gadolinium 22, iron 65.5
 (atomic) 242490-20-6, Cobalt 12.2, gadolinium 24, iron 63.8 (atomic)
 242490-21-7, Cobalt 11.8, gadolinium 26, iron 62.2 (atomic) 242490-22-8,
 Cobalt 11.5, gadolinium 28, iron 60.5 (atomic) 242490-23-9, Cobalt 36,
 gadolinium 20, iron 44 (atomic) 242490-24-0, Cobalt 20, gadolinium 20,
 iron 60 (atomic) 242490-25-1, ***Aluminum*** 25, gadolinium 3.75,
 iron 71.2 (atomic) 242490-26-2, ***Aluminum*** 25, gadolinium 10.5,
 iron 64.5 (atomic) 242490-27-3, ***Aluminum*** 25, gadolinium 13.5,
 iron 61.5 (atomic) 242490-28-4, ***Aluminum*** 25, gadolinium 18.8,
 iron 56.2 (atomic) 242490-29-5, ***Aluminum*** 25, gadolinium 21.8,
 iron 53.2 (atomic) 242490-30-8, ***Aluminum*** 25, gadolinium 24,
 iron 51 (atomic) 242490-31-9, ***Aluminum*** 25, gadolinium 30, iron
 45 (atomic) 242490-32-0, ***Aluminum*** 25, gadolinium 52.5, iron
 22.5 (atomic) 242490-33-1, ***Aluminum*** 25, gadolinium 67.5, iron
 7.5 (atomic) 242490-34-2, ***Aluminum*** 25, gadolinium 75 (atomic)
 242490-35-3, ***Aluminum*** 75, gadolinium 2.5, iron 22.5 (atomic)
 242490-36-4, ***Aluminum*** 70, gadolinium 3, iron 27 (atomic)
 242490-37-5, ***Aluminum*** 50, gadolinium 5, iron 45 (atomic)
 242490-38-6, Gadolinium 7.5, iron 67.5, titanium 25 (atomic)
 242490-39-7, Gadolinium 7.5, iron 67.5, tantalum 25 (atomic)
 242490-40-0, Gadolinium 7.5, iron 67.5, ***platinum*** 25 (atomic)
 242490-41-1, Gadolinium 7.5, ***gold*** 25, iron 67.5 (atomic)
 242490-42-2, ***Copper*** 25, gadolinium 7.5, iron 67.5 (atomic)
 242490-43-3, ***Aluminum*** 12.5, gadolinium 7.5, iron 67.5, titanium
 12.5 (atomic) 242490-44-4, ***Aluminum*** 12.5, gadolinium 7.5, iron
 67.5, tantalum 12.5 (atomic) 242490-45-5, Cobalt 23.5, dysprosium 16,
 iron 60.5 (atomic) 242490-46-6, Cobalt 23, dysprosium 18, iron 59
 (atomic) 242490-47-7, Cobalt 20.7, dysprosium 26, iron 53.3 (atomic)
 242490-48-8, Cobalt 38.5, dysprosium 23, iron 38.5 (atomic) 242490-49-9,
 Cobalt 46.2, dysprosium 23, iron 30.8 (atomic) 242490-50-2, Cobalt 62.4,
 dysprosium 23, iron 14.6 (atomic) 242490-51-3, Cobalt 69.3, dysprosium
 23, iron 7.7 (atomic) 242490-52-4, Cobalt 73.2, dysprosium 23, iron 3.85
 (atomic) 242490-53-5, Cobalt 4.5, gadolinium 10, iron 85.5 (atomic)
 242490-54-6, Cobalt 4.4, gadolinium 12, iron 83.6 (atomic) 242490-55-7,
 Cobalt 4.3, gadolinium 14, iron 81.7 (atomic) 242490-56-8, Cobalt 4.2,

gadolinium 16, iron 79.8 (atomic) 242490-57-9, Cobalt 4, gadolinium 20,
 iron 76 (atomic) 242490-58-0, Cobalt 67.2, gadolinium 16, iron 16.8
 (atomic) 242490-59-1, Cobalt 71.4, gadolinium 16, iron 12.6 (atomic)
 242490-60-4, Cobalt 75.6, gadolinium 16, iron 8.4 (atomic) 242490-67-1,
 Aluminum 27, gadolinium 3.65, iron 69.4 (atomic) 242490-68-2,
 Aluminum 27, gadolinium 7.3, iron 65.7 (atomic) 242490-69-3,
 Aluminum 27, gadolinium 10.2, iron 62.8 (atomic) 242490-70-6,
 Aluminum 27, gadolinium 13.1, iron 59.9 (atomic) 242490-71-7,
 Aluminum 27, gadolinium 18.2, iron 54.8 (atomic) 242490-72-8,
 Aluminum 27, gadolinium 21.2, iron 51.8 (atomic) 242490-73-9,
 Aluminum 27, gadolinium 24.1, iron 48.9 (atomic) 242490-74-0,
 Aluminum 27, gadolinium 26.3, iron 46.7 (atomic) 242490-75-1,
 Aluminum 27, gadolinium 28.5, iron 44.5 (atomic) 242490-76-2,
 Aluminum 27, gadolinium 36.5, iron 36.5 (atomic) 242490-77-3,
 Aluminum 27, gadolinium 54.8, iron 18.2 (atomic) 242490-78-4,
 Aluminum 27, gadolinium 73 (atomic) 242490-79-5,
 Aluminum 72, gadolinium 10.9, iron 17.1 (atomic) 242490-80-8,
 Aluminum 65, gadolinium 13.6, iron 21.4 (atomic) 242490-81-9,
 Aluminum 47, gadolinium 20.7, iron 32.3 (atomic) 242490-82-0,
 Aluminum 5, gadolinium 37, iron 58 (atomic) 242798-55-6,
 Aluminum 5, gadolinium 15.2, iron 79.8 (atomic) 242798-56-7,
 Aluminum 10, gadolinium 14.4, iron 75.6 (atomic) 242798-57-8,
 Aluminum 15, gadolinium 13.6, iron 71.4 (atomic) 242798-58-9,
 Aluminum 20, gadolinium 12.8, iron 67.2 (atomic) 242798-59-0,
 Aluminum 25, gadolinium 12, iron 63 (atomic) 242798-60-3,
 Gadolinium 14.4, iron 75.6, titanium 10 (atomic) 242798-61-4, Gadolinium
 14.4, iron 75.6, tantalum 10 (atomic) 242798-62-5, Gadolinium 14.4, iron
 75.6, ***platinum*** 10 (atomic) 242798-63-6, Gadolinium 14.4,
 gold 10, iron 75.6 (atomic) 242798-64-7, ***Copper*** 10,
 gadolinium 14.4, iron 75.6 (atomic)
 RL: PEP (Physical, engineering or chemical process); TEM (Technical or
 engineered material use); PROC (Process); USES (Uses)
 (magneto-optical recording medium and recording method using such
 medium)

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Anon; EP 0352548 1990
- (2) Anon; EP 0596716 A2 1994
- (3) Anon; EP 0604065 A2 1994
- (4) Anon; EP 0668586 A2 1995
- (5) Anon; EP 0810594 A2 1997
- (6) Nishimura, N; Journal of Applied Physics Part 02B 1996, V79(8), P5683
CAPLUS
- (7) Tamanai, K; Digest of papers presented at Moris '94 Sep 27-29 1994 Tokyo
Japan; 29-K-05 P126
- (8) Tamanai, K; Journal of the Magnetic Society of Japan 1995, V19, P421

L11 ANSWER 12 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1997:119285 CAPLUS

DN 126:134427

ED Entered STN: 21 Feb 1997

TI Vacuum-metalizing apparatus for automated operation in coating of
 compact - ***disk*** substrates by ***sputtering***

IN Leblanc, Arthur R., III; MacMillan, Donald W.; Parent, Donald G.; Parent,
 Scott R.; Rossignol, Brian C.

PA First Light Technology, Inc., USA

SO PCT Int. Appl., 28 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C23C014-50

ICS C23C016-00; B05C013-00

CC 56-6 (Nonferrous Metals and Alloys)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9641899	A1	19961227	WO 1996-US8997	19960606
	W: JP				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5709785	A	19980120	US 1996-658170	19960604
PRAI	US 1995-88P	P	19950608		
	US 1996-658170	A	19960604		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 9641899	ICM	C23C014-50
	ICS	C23C016-00; B05C013-00
	IPCI	C23C0014-50 [ICM,6]; C23C0016-00 [ICS,6]; B05C0013-00 [ICS,6]
	IPCR	C23C0014-50 [I,A]; C23C0014-50 [I,C]; C23C0014-56 [I,A]; C23C0014-56 [I,C]
	ECLA	C23C014/50B; C23C014/56D2
US 5709785	IPCI	C23C0014-50 [ICM,6]; C23C0014-56 [ICS,6]; C23C0016-00 [ICS,6]
	IPCR	C23C0014-50 [I,A]; C23C0014-50 [I,C]; C23C0014-56 [I,A]; C23C0014-56 [I,C]
	NCL	204/298.250; 118/503.000; 118/719.000; 118/728.000; 118/729.000; 118/730.000; 204/298.150; 204/298.230; 204/298.260; 204/298.270; 204/298.280; 204/298.290
	ECLA	C23C014/50B; C23C014/56D2

AB The app. for vacuum metalizing includes holding fixtures suitable for automated loading of ***compact*** - ***disk*** substrates with the assocd. alignment, ***masking***, and sealing, followed by rapid coating. The metal films (esp. Al and/or ***Au***) are applied on the disks by ***sputtering***, followed by unloading of the disks.

ST vacuum app automated metalizing ***compact*** ***disk*** ;
 aluminum ***sputtering*** ***compact*** ***disk***
 vacuum app; ***gold*** ***sputtering*** ***compact***
 disk vacuum app

IT Computers
 (***compact*** ***disks*** ; vacuum metalizing app. for
 automated coating of ***compact*** ***disks*** by
 sputtering)

IT Process control
 (metalizing; vacuum metalizing app. for automated coating of
 compact ***disks*** by ***sputtering***)

IT ***Sputtering***
 (vacuum metalizing app. for automated coating of ***compact***
 disks by ***sputtering***)

IT 7429-90-5, ***Aluminum***, processes 7440-57-5, ***Gold***,
 processes

RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (coating with; vacuum metalizing app. for automated coating of
 compact ***disks*** by ***sputtering***)

L11 ANSWER 13 OF 13 INSPEC (C) 2006 IEE on STN

AN 2005:8512383 INSPEC DN A2005-18-4280T-005; B2005-09-4120-014

TI Enhanced readout signal of ***superresolution*** ***near*** -
 field structure disks by control of the size and distribution of
 metal nanoclusters

AU Jenq-Nan Yih; (Inst. of Opt. Sci., Nat. Central Univ., Chung-li,
 Taiwan), Wei-Chih Hsu; Song-Yeu Tsai; Shean-Jen Chen

SO Applied Optics (20 May 2005), vol.44, no.15, p. 3001-5, 21 refs.

CODEN: APOPAI, ISSN: 0003-6935

SICI: 0003-6935(20050520)44:15L:3001:ERSS;1-Q

Price: 0003-6935/05/153001-05\$15.00/0

Published by: Opt. Soc. America, USA

DT Journal

TC Practical; Experimental

CY United States

LA English

AB We present a study in which we enhance the carrier-to-noise ratio of a
 superresolution ***near*** - ***field*** structure (super-
 RENS) disk to read below 100-nm marks by implementing a
 mask layer comprising a ***Au*** nanocluster-embedded
 dielectric film. Various ***Au*** nanocluster-embedded
 mask layers are fabricated by a radio-frequency cosputtering
 process, and the size and distribution of ***Au*** nanoclusters are
 controlled. To verify the enhancement of the various films for super-
 RENS disk applications, the sensitivity enhancement of plasmonic
 gas sensing is demonstrated

CC A4280T Optical storage and retrieval; A7865E Optical properties of metals
 and metallic alloys (thin films/low-dimensional structures); A6146
 Structure of solid clusters, nanoparticles, nanotubes and nanostructured

materials; A7755 Dielectric thin films; A7320M Collective excitations
(surface states); A8280T Chemical sensors; B4120 Optical storage and
retrieval; B7230L Chemical sensors; B7320T Chemical variables measurement
CT ***dielectric*** thin films; gas sensors; ***gold*** ;
masks ; nanostructured materials; ***optical*** ***disc***
storage; ***sputtering*** ; surface plasmons
ST enhanced readout signal; superresolution near-field structure; near-field
structure disks; size control; distribution control; metal nanoclusters;
carrier-to-noise ratio; mask layer; Au nanocluster; dielectric film;
radiofrequency cosputtering; sensitivity enhancement; plasmonic gas
sensing; optical data storage; Au
CHI Au el
ET Au

=> d his

(FILE 'HOME' ENTERED AT 16:35:09 ON 20 MAR 2006)

FILE 'CAPLUS, INSPEC' ENTERED AT 16:35:18 ON 20 MAR 2006

L1 182532 S ((NEAR(3A)FIELD) OR MASK OR MASKING OR RENS OR SUPERRESOLUTIO
L2 1842 S ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPE
L3 61 S L2 AND ((OPTICAL OR LASER OR INFORMATION OR COMPACT) (3A) (DISK
L4 5945 S ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPE
L5 7716 S ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPE
L6 126 S L1 AND L5
L7 1 S L6 AND ((OPTICAL OR LASER OR INFORMATION OR COMPACT) (3A) (DIS
L8 37902 S ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPE
L9 1214 S L1 AND L8
L10 23 S L9 AND ((OPTICAL OR LASER OR INFORMATION OR COMPACT) (3A) (DIS
L11 13 S L10 NOT L3

=> log y

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	411.31	411.52
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-37.50	-37.50

STN INTERNATIONAL LOGOFF AT 16:43:45 ON 20 MAR 2006